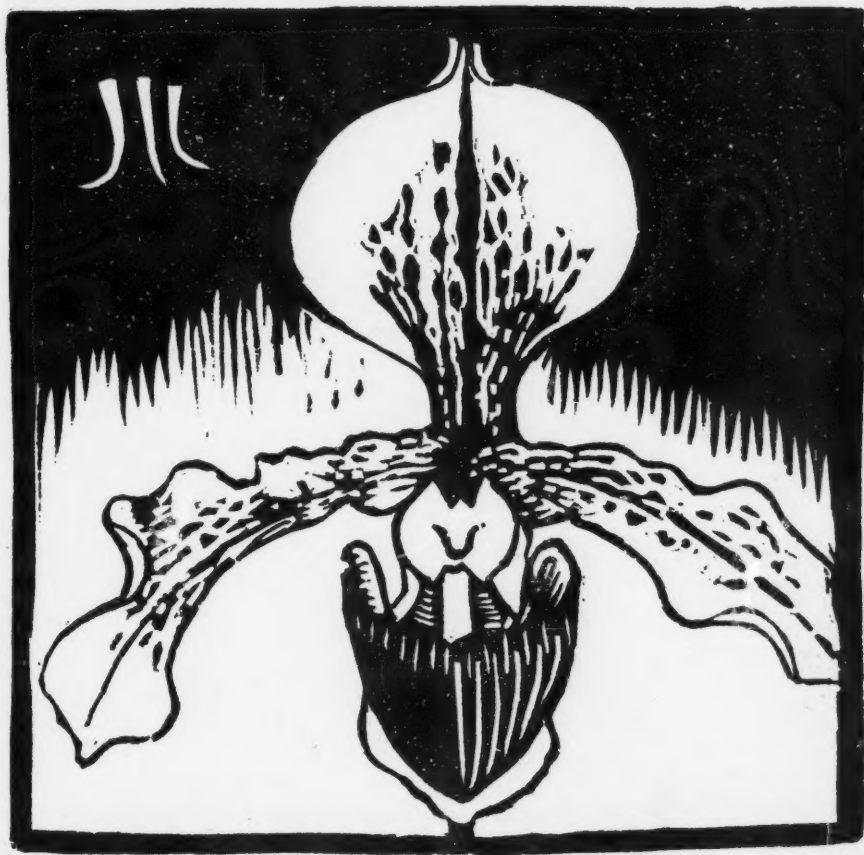


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Plants of New Zealand Grown in California

BY KATHERINE D. JONES

Once Californians were challenged by a man from New Zealand in the following words: "New Zealand holds within its tide-swept margins the greatest variety of inspiring scenery in the smallest compass known in the world. It has charm peculiarly its own, and in many respects it is *better than California at its very finest*. Some of its natural marvels are unsurpassed, such as its majestic mountains, snow-clad peaks, glacier-carved canyons, noble rivers, lovely lakes, lofty waterfalls, great gushing geysers, beetling ocean cliffs and gigantic trees."

The 1915 Panama-Pacific International Exposition brought New Zealand plants persistently before Californians in large numbers as living plants were brought over a year or two before the exposition site was ready for them and they were nursed along in the exposition nursery and also in the McRorie and McLaren nursery at San Mateo. These plants attracted a great deal of attention at the time because they were unusual and totally different from the Australian plants we had been accustomed to seeing in California. We watched the plants throughout the seven months of the exposition and then again after they were transferred to Golden Gate Park for permanent study. Now in 1935, twenty years after that introduction, we are still studying and wondering why New Zealand plants have not taken a better hold in our gardens. Certain outstanding individuals we find scattered throughout the State, but a general survey shows that we are still hesitating to recommend New Zealand plants for any but the coastal regions of California, although the beautiful daisy-like *Celmisias* come from the subalpine regions of New Zealand and are very hardy and should be tried out in the Sacramento and San Joaquin Valleys, as well as in our coastal regions. Most of these plants have done well in the trial gar-

dens in Golden Gate Park and many of them in Berkeley and Santa Barbara. Still they seem to have their limitations as some of them attract mealy bugs, some are tender and others short-lived (*Veronicas*).

A new interest in New Zealand plants may again be started if the proposed project of sending a fresh importation of New Zealand plants to the coming exposition at San Diego can be handled by some nurseryman in Southern California; and thus give that part of the State the benefit of their living plants to start from cuttings.

Gardeners in Europe have made persistent attempts to grow New Zealand plants but with varying success. They admit that the results are puzzling as many of the plants grow well for several years and then they pass suddenly with no apparent cause. Another fact is surprising, for various gardens about Kew in England have had poor success with many of the New Zealand plants while in Edinburgh, Scotland, farther north they have good success with these plants. The English are going to try again with seed that comes from a hardier part of New Zealand and that may be a hint for us.

Now that we are securing so many of the New Zealand plants, we should study up the types as to where they

thrive best, whether in lowland forest, great plains, hillsides or alpine meadows, in order to gain some inkling of where and how to grow them successfully in California.

What do you know about New Zealand? Would you amuse their people by asking them if they spend their week-ends in Australia, which is twelve hundred miles away so that eight days are needed to make the round trip over the Tasman sea? New Zealand is one of the most interesting countries in the world if you study its rocks, its native people—the Maoris—its colonization and its development. Its plants also are tremendously interesting in their life histories with their puzzling actions which upset all conceived notions of what a well-behaved plant ought to do.

New Zealand is six thousand miles southwest of San Francisco and lies in subtropical and temperate regions of the Pacific Ocean. We generally expect it to have the same climate and flora as Australia but such is far from the case. It has no native Acacias, Eucalyptus, Hakeas or Melaleucas and other bright plants of Australia but its flowers are mostly green or white and there are various other differences which I shall try to show you later.

This interesting country consists of North Island and South Island and many outlying islands varying in temperature from the tropical Kermadecs in the north to the wind-swept southernmost group of the Antarctic where the birds have learned to fly low for fear of being carried out to sea.

Climate. These islands do not have a regular rainy season as we do in California for it may rain any day in the year or any hour of the day. It is likely to rain a little more in winter than in summer. North Island is the rainiest, with 163 rainy days, while South Island has 155 rainy days.

January and February are their hottest months and July and August their coldest. In North Island, snow falls only on the mountains and high hills and seldom in Wellington and Auckland. In South Island there is much snow south of Christchurch. The return trade winds blow from the northwest and southwest and dashing against the western flanks of the Southern Alps, drop the heaviest rainfall on an evergreen forest of great luxuriance in Westland. The wind thus deprived of most of its moisture leaves the eastern flank of the mountains much drier while the higher mountains become bare. The sun and the frost split the rocks into shingles which fall thousands of feet below as huge fans that are very slowly carried away by the great streams of water of the spring freshets.

On looking at the physical map of New Zealand you will see that the two principal islands are very different in character. North Island nearer the tropics is mild with little frost, where lemons and oranges can be grown successfully. South Island nearer the antarctic, has a more vigorous climate on account of its long chain of mountains covered with perpetual snow. North Island has very aptly been described as "like a box with the corners drawn out," the northern arm very long and narrow with Auckland its former capitol situated in the middle of an ancient crater lake. Most of the land is low and very poor but still contains some fine forest trees. The eastern corner is due to a range of mountains which push out into the sea as East Cape. The south corner is mostly made up of plains with a low ridge of mountains running through it. Here are the vast sheep lands of the northern island. Wellington is the Capitol. The western corner is dominated by Mt. Egmont, a former vol-

cano but now quiescent. Surrounding this great cone are immense forests fed by the 60 rivers that flow down the mountain side with little rivulets and rills every few yards. On both the east and the west the forests are extensive along the coast and for 50 miles inland but above 1,000 feet they are replaced by Tussock country containing coarse grasses and large quantities of brake. In the center of the island above 1,000 feet altitude is Lake Taupo, a crater lake in the midst of the Thermal Region made up of hot springs, geysers, mud baths and various other natural features. In spite of the frequent earthquake and threatening destruction the native Maoris live on the edge of a cold lake with boiling springs all about them where they cook their food, wash their clothes or take their baths in the tepid water. It is here that the New Zealand Government established its Sanatorium and draws a good revenue from the tourist trade and from the sick from all parts of the world who flock to its healing waters. This mecca for the sick as well as being the play area is of earthquake origin, is only 300 miles long and contains 6,000 square miles more or less covered by pumice from their five or six extinct volcanoes. It still has three active volcanoes, two of them, Ruapehu and Tongariro being in the southern part of the Thermal area while the third volcano is out in the sea at White Island about 25 miles from land. This White Island volcano has a perpetual white cloud about it and never ceases its activity. Northeast of Lake Taupo is Lake Rotorua, famous for its fine fishing, and near at hand a chain of four lakes that are very beautiful. Still east of this chain of lakes is the "Terrible Tarawera" Volcano, which in 1884 blew up the most beautiful and won-

derful terraces in the world, together with several native villages!

South Island is the shape of a rectangle with a chain of snow-capped mountains on the west running the entire length from north to south. Mt. Cook the highest peak of over 14,000 feet is surrounded by dozens of other peaks over 7,000 feet high. Here are great glaciers flowing down the sides of the mountain and joining other glaciers further down and endless rivers foaming and dashing down the slopes. The mountains attract great numbers of hardy mountain climbers every year for they are more difficult and dangerous to climb than the famous Alps of Switzerland. The Southern Alps are so high and near the western coast that they stop the rain clouds from the trade winds and precipitate the moisture on that side so that it has produced a moist and mild climate which in course of time has built up a fine rain forest of many kinds of trees.

In contrast with its numerous mountains, New Zealand has open plains scattered throughout the country, the largest of which is Canterbury plain two and a half million acres in extent and covered with a plant combination that is quite similar in all the different plains. This is called the Tussock country and is made up of Tussock grasses (*Poa caespitosa*, *Poa anceps*, *Danthonia* and *Festuca*) Toe-toe (*Arundo conspicua*) near water courses, New Zealand Flax (*Phormium tenax*) near rivers and Cabbage Tree or Palm Lily (*Cordyline australis*) scattered throughout the plains.

The most picturesque portion of New Zealand is the south western part where the fiords are said to rival those of Norway. On the other side of the divide are the chain of lakes that are considered the "finest in the

world" surrounded by forest of great beauty. The land is too wild and impossible to be used for homes so the New Zealand government has wisely created it into a park the area of which is two and a half million acres.

RIVERS

The rivers of New Zealand are short and swift and not usually navigable for more than 30 to 100 miles. One of the most beautiful is Wanganui which has its source near Tongariro Volcano and flows southeast to the sea through high canyons, draped with various kinds of filmy ferns, while now and then between the cliffs glimpses may be had of some distant scenery or some brilliant trees in full bloom. The boat glides down over rapids and through canyons from the mountains to the sea.

The rivers down the mountains through Westland are the shortest, swiftest, and most dangerous. A false step into a deep hole as one tries to cross a ford and man or donkey would be carried helplessly down the current and out to sea.

FLORA OF NEW ZEALAND

The flora of New Zealand is peculiar in many ways. Cheeseman states that three-fourths of its plants are endemic and not found native in any other country. No other island in the world, of like extent, has so high a percentage of local forms. He thinks it may be due to the following causes:

1. To the long isolation of the islands.
2. To the difficult conditions under which the plants have to live, as it is only 75 miles to sea in any direction and 20 to 30 miles to perpetual snow. Again the amount of rain varies from 15 inches in middle Otago Province to 200 inches in the southwestern corners of

South Island. Some regions are frostless and in others the plants are alternately freezing and melting.

3. Partly due to the flora from which their own plants have been derived, whether from the subantarctic or the subtropical, or Malayan.

The flora is remarkable in having one-seventh of all its plants belonging to the Composite Family, and while many composites are among our common garden plants we must admit that a great many of them are weedy-looking and some of them serious pests, such as the dandelions or the Napa Thistle.

It is famous for its development of tree ferns which help to give their forests in North Island their sub-tropical appearance.

There are few perennial flowers scattered through the country as we have in California, but these are situated in the alpine and subalpine regions where it takes mountain climbers to see them in general, though they do come down to low land in several places.

For all its subtropical appearance there is but one native palm.

There are odd plants like *Carmichaelias* whose stems flatten out and act as leaves.

It is the only country in the world where *Metrosideros* have learned to climb trees.

It has many examples in which the juvenile leaves are very different from the mature leaves, *Hoheria*; *Plagianthus*, a case where one of the forms of the juvenile leaf resembles a *Coprosma*.

In order to learn how best to grow New Zealand plants we should look at the conditions in which they thrive in their native land in their forest trees, both pure forests and mixed for-

ests, of their lianes, their shrubs, their ferns and their perennial herbs for pot plants and rock gardens.

FORESTS OF NEW ZEALAND

"I am Tane—the Tree-God;
Mine are forests not a few—
Forests, and I love them greatly,
Moss-encrusted, ancient, stately."

—DOMETT.

Tane, the Tree-God was very real to the native Maoris who never cut down a large tree without first making sacrifices to Tane. Thus there was no willful waste of the grand old forest trees. When the whites first colonized New Zealand there were 30,000,000 acres of forest. In less than twenty years it was reduced to half that amount and we almost wish that the colonists had also believed in the Tree-God for after the whites had used up the land of the plains for their grain fields and their sheep ranges they began to creep deeply into the forests to cut and burn those priceless trees in order to grow wheat. Now their punishment is coming swiftly for the denuded land is already being carried away to the sea by occasional floods.

Forests are of two kinds, pure forests and mixed forests. Pure forests are usually formed of one kind of tree, the *Nothofagus* being the most prevalent trees of this kind in both Islands, reaching from near the seashore up to alpine heights. They may be found in both wet and dry lands but prefer the dry. *Agathis australis*, the Kauri Pine, is in immense groves and forests in the Auckland Province of North Island. Tawa (*Beilschmiedia Tawa*) is in many districts of the north but is found in immense quantities in the south of Auckland Province. *Podocarpus dacrydioides*, White Pine, is found in swamps in both Islands.

Mixed forests are composed of a great many kinds of trees, often as many as 50, all growing together on one acre of ground. These are mostly in low land regions along the coast. Pure forests, such as the *Nothofagus*, do not have much undergrowth as they do not favor their own seedlings or other plants under themselves. In Australia and even in our Sierra Nevada mountains, we can walk freely under the forest trees but in New Zealand the mixed forests are almost impenetrable due to the lianes, epiphytes, orchids and ferns that hang from every tree in great clinging masses.

Reeves has described such a forest as filled, every foot, with ferns and orchids on the grounds, mosses and orchids and epiphytes on the tree trunks and immense epiphytes like huge birds growing on the topmost limbs of a tall tree, blocking out the light and air and sometimes of great weight on the branches.

The lianes are the worst to get through, especially Supple Jack (*Rhipogonum scandens*) which climbs the trees and sends down numerous curling stems so strong and entangling that it is impossible to break through without a sharp axe.

Another climber on the outskirts of the forests is the Southern Bramble (*Rubus australis*) with sharp hooked prickles on its midribs by which they climb trees and fall down in great mats from the top of the tree to the ground. Or you may see *Metrosideros robusta* reaching down its roots to the earth and encircling its host with its iron grip.

All these climbers, orchids and other plants make these forests dark and gloomy. We peer about in the dim light trying to find out what leaves belong to which tree trunk, but all is confusion. The forest is so still and mysterious that we involuntarily look

about expecting to see the elves of the Maoris. A sudden rustle of leaves startles us but it is only one of the wingless birds and in relief we leave the forest. Here on the outskirts we come upon lovely *Hoherias* with their pure white flowers of exquisite texture glistening in the sunlight and making an unforgettable picture against the dark leaves of the evergreen forest.

Shrubs, or at least certain types of them are called SCRUB in New Zealand. "The leaves of the typical scrub plant are small, and sparse, the branches rigid, twiggy and often pointed. Some of them have stomata on the underside in wind-still tubes, formed of the inrolled margins and the rough hairs. Transpiration is thus checked and the plant can stand long continued isolation." Laing and Blackwell.

In Africa there are associated hundreds of species of *Erica*. They are the typical small shrubs we see introduced into California and form masses in open plains and on dry hillsides in their native home. In New Zealand associated with their true heath are other plants whose leaves become small and sharp-pointed. Such shrubs are *Coprosmas*, *Cassinias*, *Olearias* and some others which in wind-swept Otago are impenetrable in places. These are not the *Coprosma Baueri* type so much cultivated in California but twiggy small-leaved types so altered that we would hardly recognize them as coprosmas. In the subfamily Epacrideae are *Leucopogon*, *Dracophyllum* and *Epacris*. *Dracophyllum latifolium* (Grass Tree) with flowers in red spikes is found mostly in the *Agathis australis* forests of North Island and looks something like a Cabbage tree with long tufts of leaves out on the ends of the branches. This species was useful to the Maoris, who made especially fine cloth of it.

In various parts of New Zealand there are interesting and beautiful shrubs of the heath family associated with *Leptospermum scoparium*, which is prevalent in many groups.

Much importance is given to the *Olearia* which are generally charming and quite numerous, New Zealand having forty-two species. One of the most beautiful of the shrubby Compositae is said to be *Pachystegia insignis* (Syn. *Olearia insignis*). This is a low spreading shrub with large leaves 3 to 7 inches long and 1 to 4 inches broad. These are crowded at the ends of the branches and are very thick and leathery, green above and white beneath unless dry when they turn reddish. It is said to be very handsome and remarkable. In fact, its common name is The Remarkable *Olearia*. It grows on rocky cliffs and ledges in Northeastern South Island along several of the rivers. The flowers are white on a large thistle-like involucre. I hope some one will succeed in growing this interesting flower in California. In Golden Gate Park it has already bloomed and seems to be thriving well.

Mention should also be made of *Veronicas* and *Hebes*, the latter the woody stemmed species which have lately been transferred to *Hebe*. Dr. Cockayne considers these their most important shrubs for garden purposes. Not only are there over 100 varieties to choose from but they vary in size from those a few inches tall to those 15 to 25 feet, and in form from the prostrate ones to the round balled ones like *H. buxifolia*, the naturalistic like, *H. hulkeana* and the Cypress-like foliage (whipcord ones), like *H. cupressioides*. Most of them are of easy culture and can be grown from cuttings and sold at a nominal price by nurserymen. Once they get old and shabby as hedge plants they may be cut to within 4

inches of the ground and will usually (not always) break out and start a new hedge. They are especially happy in Golden Gate Park in sandy soil and in St. Francis Wood, where they thrive lustily. They are less happy in adobe soil.

HERBACEOUS PERENNIALS

Cockayne says "Most of them do not die to the ground yearly as they do in the temperate Northern Hemisphere and are therefore stiff and leathery or covered beneath with a dense mat of hairs resembling flannel, felt, leather, etc. Most of them occur in the mountains and are not easy to cultivate in the lowlands, unless in specially prepared rock gardens where shade, perfect drainage and abundant moisture are supplied. Where their is a moist climate and low summer temperature many can be grown in the ordinary border. In a dry climate wrap the roots in moss and wet sphagnum before planting and they stand a better chance to live. Almost all of them can be cultivated successfully as cut plants. Many of the species are worthy of a little trouble, since they are amongst the finest alpine in the world." He recommends the following species for California and as pot plants for the rest of the United States.

Acaena microphylla. It is already well established in the Bay Region. "A rather hardy plant for forming glaucous-colored mats on rockwork."

Aciphylla Colensoi (Yucca-like).

Aciphylla conspicua.

Aciphylla maxima, 6 to 10 feet.

Aciphylla Monroi, rock plant a few inches tall.

"*Anisotoma antipoda* leaves finely cut, purplish flowers. Hardy, needs moisture and shade.

Anistome latifolia, 3 feet tall or more.

A magnificent plant with thick, leathery dark-green fern-like leaves, 2 feet long, and rosy-lilac flowers. Hardy, needs moisture and shade.

Aristelia, sword-like leaves. For pot culture.

Aristelia cunninghamii.

Aristelia montana, silvery leaf with colored mid-rib. Extremely hardy.

Aristelia solandri, not so hardy as *A. montana*.

Aristelia trinervis, not so hardy as *A. montana*.

Arthropodium cirrhatum, Mabel Island Lily. Fairly hardy and will grow in quite dry soil.

Celmisia, 50 species and the most important genus of herbs in N. Z. It is related to Aster. The flower-heads, raised on stiff stems, have abundant white ray-florets. The following would be good:

Armstrongii, *coriacea*, *argentea*, *discolor*, *Hookeri*, *incana*, *holoceriacea*, *lanceolata*, *Lindsayi*, *rigida*, *sessiliflora*, *Traversii*, and *Walkerii*. All require rock-garden conditions.

Geranium Traversii var. *elegans*, pink flowers.

Myosotidium nobile, Giant Forget-me-not. It should be raised from seed and grown in a moist, not too sunny, situation.

Myosotis capitata, blue of Lord Auckland Islands, is one of the most beautiful plants in the New Zealand Flora.

Ourisia, worthy of first place in any rock garden.

Ourisia caespitosa.

Ourisia macrocarpa.

Ourisia macrophylla, the handsomest.

Nertera depressa, with red fruit.

Nertera Balfouriana, with orange-colored fruits, is equally showy.

Both species are hardy. They prefer moist ground, but may also be used as pot plants.

Raoulia sp. Fine for rock gardens.

Raoulia eximia, can be cultivated as pot plants in greenhouses.

MISTLETOES

In California we have but two kinds of Mistletoe, the Pine Mistletoe (*Arceuthobium*), whose flowers are mostly compressed, and the Common Mistletoe (*Phoradendron*), mostly found on deciduous trees with the flowers rather inconspicuous. But in New Zealand they have the Four-petaled Mistletoe (*Phoradendron*), mostly lighten up their dark beech forests into a scene of great beauty. It is found most frequently upon Black Beech (*Nothofagus Solandri*) and can best be seen from a boat as one glides down a stream where these beech meet overhead. These flowers are produced in great abundance "glowing like jewels among the dark green leaves of the beech." When the petals are ready to fall they clothe the floor of the forest with a crimson carpet. The whole effect is as brilliant as the blooms of the *Metrosideros* trees.

FERNS

Ferns are so plentiful and beautiful in New Zealand that they have been adopted as their national plant. "No country of equal size outside the tropics has such a large number of ferns as New Zealand, and possibly none could show greater magnificence of fern life." These ferns are especially luxurious north of Lake Taupo where the tree ferns and lesser ferns grow in great variety. The fern lover should collect on the west side of Mount Egmont, from the sea-coast through their heavy

forests nearly to the snow line, a distance of 20 miles. There are 120 varieties of native ferns in New Zealand besides a great number of exotic ones that have been brought into the country. It might interest you to note that their common brake (*Pteris aquilina esculenta*, as they determine it), is ten feet tall and so thick that the Maoris warriors used to hide in its masses and war on the English soldiers with telling effect during the ten-year war between the Maoris and the colonists. Also wild pigs fed on the rhizomes during the day time and at night made raids on the lambs of the colonists.

Besides these brakes were the tree ferns which made their forests look semi-tropical and, combined with the native palm and the cabbage tree, are a sight of rare beauty. Many of these tree ferns have been grown in California and the following are now in Golden Gate Park as a part of the De Laveaga Dell and are growing happily under the coastline oak tree: *Cyathea dealbata* (Silver Tree Fern), *Cyathea medullaris*, *Dicksonia fibrosa* and *Dicksonia squarrosa*.

Alectryon excelsum, New Zealand Ash

This is said to be one of the handsomest trees in New Zealand due to its shining compound leaves, about a foot long, and its numerous jet black seeds set in a scarlet cup.

This is growing in several parts of California and seems to do best in partial shade, as you would expect it to do since it is one of the forest trees which are so crowded for room and light that they do not thrive well out in the open. The specimens in Golden Gate Park are very handsome, with clean, choice evergreen leaves, almost a foot in length. The specimen at the Golden Gate Park Lodge gets some sun

*Wm. A. Matthews**Alectryon excelsum*

in the morning but is protected by a deciduous oak tree from the hot afternoon sun. It is very handsome, compact, rather formal looking without ap-

pearing so, and the pride of the Lodge gardener. I have not yet seen it in fruit. Nor did the specimen at the Sexton place, Goleta, near Santa Barbara,

seem to bear fruit above the low geranium at the foot of the tree. Under them we found that it fruited rather abundantly.

It also stands abuse, for the tree on the University of California grounds at Berkeley had to be moved out of its old location and was boxed for several months before it was set out in the open lawn. It is getting open and broad-headed but lives, and also came through the 1932 freeze without killing it.

The accompanying photograph does not do justice to the beauty of the leaves but it was the best material available at the time as we had to have branches that showed the fruit.

Carmichaelias were named after Mr. Carmichael, a Scotch botanist. This genus is peculiar to New Zealand and to Lord Howe's Island. It is remarkable for the way it discharges its seeds. The margins of the pods are thickened into a framework, called the replum. To this the seeds are attached. When it is time for the pods to open the sides of the valves come away and leave the seeds hanging to the replum. These seeds may be either red or black. New Zealand botanists state that this genus is the most difficult of any of the New Zealand genera as they may or may not have dropped their leaves and have usually flattened out their branches to take the function of leaves. The pods are most important as an aid to their determination.

Carmichaelia australis, The Southern Carmichaelia.

This is sold by New Zealand nurserymen for its oddity, since its leaves are seldom seen after it is mature. Its flowers are a pale purple on flat elongated branchlets. Its habit is erect and although this shrub in Golden Park is

about 6 feet tall it is not yet dense enough to be attractive. Notice its flat branchlets, their distant alternate notches and the pods not yet mature enough to show the typical method of holding the seeds in the replum. The flowers are said to be very fragrant, and the seeds red sometimes with black spots.

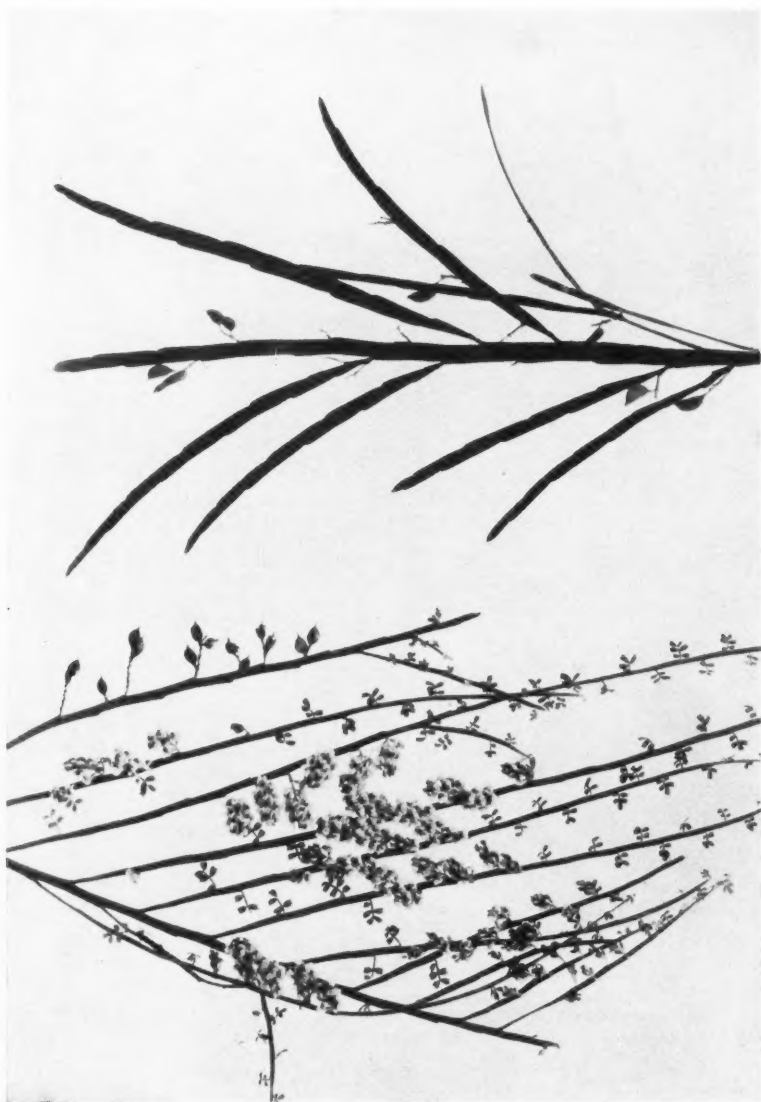
Up to date I should class this plant as odd and interesting but not beautiful.

It is native to the southern part of North Island and on the adjacent tip of South Island and will go from sea-level to 2,800 feet.

Carmichaelia odorata.

This is a much more graceful shrub than *C. australis* as its slender branchlets are pendulous and covered with short racemes of tiny, pea-shaped flowers in bloom June 5, 1933, and July 26, 1933 and still in bloom August 16, 1933, about two months. It blooms on top of its flat branches, the racemes pushing up toward the sun and above the branchlets. They are about 4 feet tall and partly drooping, but it seems to require age to get a size large enough to droop gracefully. Most of them have a worried, underfed appearance. They are out in the hot sun near a ditch so they have good drainage but evidently do not get enough water. December 18, 1933, it has tiny leaves coming out all over it, the fruit still green.

The stems themselves are roundish but the branchlets leading off from them are flat sprays alternating on each side of the stem and about an inch apart. On these flat sprays are the leaves. It is fascinating to study the patterns of these flat sprays as they zig zag along the main axis. The shrub casts little shade and would make a good shelter for plants that need partial shade.



Wm. A. Matthews

Carmichaelia australis with seed pods (upper)
Carmichaelia adorata pods and flowers (lower)

It occurs in North Island from its southern corner down to Cook's strait and at Nelson in South Island. It climbs the mountains to 2,500 feet.

Carmichaelia Williamsii, William's
Carmichaelia.

The light yellow color of the flowers of this species makes it easily recognized from all the others, which at times are difficult of determination. Of the three in cultivation at Golden Gate Park this has the widest flat stems taking on the function of the leaves. The photograph is natural size and gives a good idea of the young plant which has not yet filled out. At present it is three feet tall and rather drooping although it is said to be erect and eventually grows to 18 feet in height. It was just beginning to bloom in May and in June was full bloom. In its native home it blooms in November and December, which is four or five months later than with us.

Its flowers are lemon yellow, about an inch long and with a sort of bedraggled appearance. It is curious and interesting but will it seem fit in an ordinary garden? This species is promising but yet too small to determine its use under California garden conditions.

North North Island from Bay of Plenty to East Cape, making it the northern of the three species under discussion.

Cassinia, named after Mr. Cassini, a French botanist. This genus belongs to the Compositae family which cuts such a large figure in the flora of New Zealand. They are mostly evergreen shrubs and natives of Australia, New Zealand and S. Africa.

Cockayne recommended them for trial in California, stating that all the

species are easy to cultivate and will grow in almost any soil and situation except shade.

COTTONWOOD OF THE COLONISTS

Cassinia leptophylla, narrow-leaved
Cassinia.

This should be known from its small alternate leaves which are not a sixth of an inch wide, gray beneath with the edges turned inward. The flowers are white in corymbs on the ends of the branchlets, but are not particularly pleasing. The specimen from which this was photographed is growing on the south side of the Academy of Sciences in Golden Gate Park. It is about six or seven feet tall and three feet wide. Its gray color is quite pronounced and its habit rather weak and straggling.

In New Zealand it grows on both islands from East Cape in North Island to Nelson and Marlborough in South Island. It very much resembles *Cassinia retorta*, which usually grows on the sand dunes on the coast, but it has a more slender habit, smaller and narrower leaves and smaller heads. Cockayne recommended it for introduction into California though he states that it is somewhat tender and that none of the *Cassinias* like shade.

This grows in both North and South Islands, and is rather common from East Cape southward to Nelson and Marlborough in South Island.

*Coprosma*s are a remarkable genus of about 70 species, most numerous in New Zealand but not confined to that country as they are also found in Australia and extend north and east through the Polynesian Islands as far as Hawaii and also down to the islands on the Southern tip of South America.



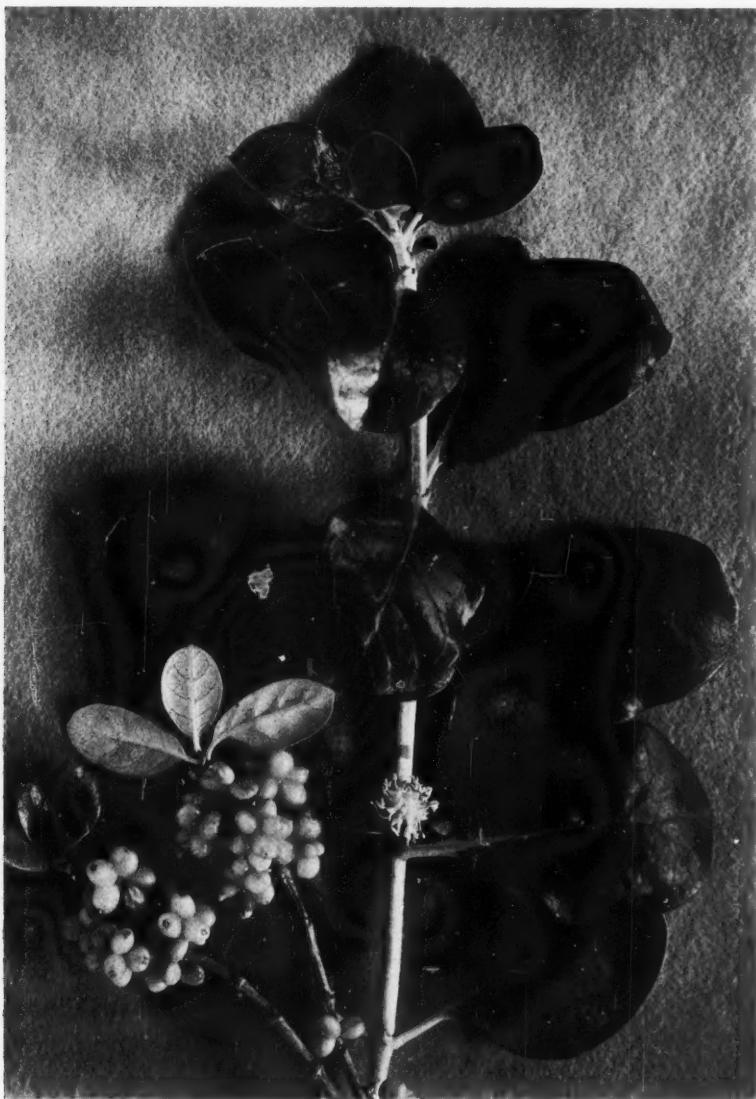
Wm. A. Matthews

Carmichaelia Williamsii

*Wm. A. Matthews**Cassinia leptophylla*

In New Zealand they are found everywhere in the scrub formations; also in low land forests and in sub-alpine regions. They seem to be wind

pollinated and when in bloom fill the air with a dense cloud of pollen. Gardeners in California always complain of the disagreeable odor of the *Co-*



Wm. A. Matthews

Coprosma Baueri

prosma Baueri roots when these shrubs are being transplanted but in New Zealand *Coprosma foetidissima* has so "horribly disagreeable an odor" when

bruised by bushmen trying to push their way through it that the air is filled with the curses of the men.

Not only do botanists, as well as

bushmen, dread to go through the *Coprosma* shrub on account of the odor but they have great difficulty in telling apart the different species as the flowers are much alike and the sexes on different bushes. The fruit seems to be the best method of determination as these are of different colors. Dr. Cockayne recommended several of these species for introduction into California on account of the bright berries but if they do not remain on the bushes here any longer than those of *Coprosma Baueri* they are scarcely worthy of being called berried shrubs.

Another puzzling thing about these *Coprosmas* is that quite a number of New Zealand plants (for example: *Hoheria* and *Plagianthus*) pass through two or three different stages of development in which the juvenile leaves are entirely different from those of the mature tree and often in one of these stages the plants closely resemble some of the *Coprosmas*.

Coprosma baueri.

A rapid growing shrub with shining leaves and a stiff straggling habit unless kept down by pruning. In San Diego it is often used at base of houses and trimmed back twice a year. This keeps the foliage thick and does not allow the plant to become coarse. When so treated it is very attractive, far more so than when allowed to grow at will. It may be used as an embankment plant, as at Hearst Mining Building, but must be severely pruned to keep it within bounds. It has good glossy foliage that will stand dust and soot but not much frost.

As the sexes are on different plants you should include some males among the number if you wish berries. The flowers are greenish and inconspicuous and followed by orange berries which

do not remain a good color more than two or three weeks.

Coprosma baueri does not group well with most flowers probably on account of its bright shining appearance as it reflects the light and calls attention to itself rather than to the flowers that otherwise blend together harmoniously, no one being more conspicuous than its neighbor.

There are two variegated forms, neither of which grows so rapidly as the type. They are sometimes grown into artistic shapes like many of the Japanese pot plants and are then surprisingly good. They look especially well with cement vases, seats or walls as they add just the needed touch of color to an otherwise somber group.

We use *Coprosma baueri* in California for hedges, tub plants, ground covers, and in mass planting. It may be propagated either by cuttings or by seeds sown as they are ripe.

Coprosma Cunninghamii, Cunningham's *Coprosma*.

This looks like a rather attractive plant does it not? It is due entirely to the art of the photographer as it is one of the plants I selected to show their inconspicuous greenish flowers. The pistillate flowers stand out each in plain sight ready to be pollinated by the wind and we are rather interested in their appearance. The photograph is natural size and shows the fairly thick but narrow leaves, which do not compare in luster with those of the *C. Baueri* or with the thick leathery appearance of *C. robusta*, occasionally seen in California.

It is 1 to 15 feet tall in New Zealand but this plant in Golden Gate Park, still young, is already 10 feet tall and 8 feet wide. It is rather fast growing and sends up numerous sprouts from near the ground that are about the size

*Wm. A. Matthews**Coprosma Cunninghamii*

of a lead pencil. They make a dense growth that would be hard to penetrate in the wild. It is in partial shade and was hurt somewhat by the 1932 freeze. I should call it rather weedy looking

and would cut it out of any garden list.

Its seeds are a pale transparent color, not as attractive as those of many other coprosmas. Propagated from seeds or cuttings.

Griselinia lucida, Shining Broad-leaf.

You would never suspect this lusty contented looking plant in Golden Gate Park to be the same one that in New Zealand grows on rocks or is an epiphyte on their tall forest trees, where it grows from 3 to 25 feet high and helps to shut out the light and air from the plants lower down in their dense gloomy forests. Here again its beauty is not in its small, inconspicuous greenish flowers but in the shining sturdy leaves and its general well being. Perched high near the tops of its tallest trees it draws its nourishment from the air, but if grown in common garden soil it is equally happy, but shows its wide adaptation to local conditions. Here it is its foliage that is its chief beauty. It will make a good screen, a windbreak, or a mass planting, where, with its variegated form (illustrated on lower right), it is inconspicuously effective. It stands both rain and wind at Piedmont as well as in Golden Gate Park.

In New Zealand this grows the whole breadth of the land from North Cape to the southern points of South Island, and their nurseymen advertise it as being hardy and standing winds and drought very well.

It is an unusual green and possibly hard to combine with the plants from other countries already here.

Hebe hulkeana, Pansy-leaved Veronica,
Pansy-leaved Hebe (Syn. *Veronica hulkeana*).

This is one of the choice Hebes of New Zealand and that is saying a great deal for they have about one hundred other species from which to choose. It is liked both for its lovely lavender

flowers and also for its informal shape, since so many of those introduced into California have the compact formal ball shapes. It blooms in summer and into the fall in long sprays fully a foot long. The handsomest specimens were seen in St. Francis Wood, San Francisco, where they were growing in sandy soil, which they much prefer to heavy adobe, though they will grow in the latter.

Hebe hulkeana is used in various ways, such as a foreground shrub, in the rock garden and in the hardy border.

It usually grows 3 feet tall and 3 feet wide and looks well with a soft pink *Heuchera sanguinea*. It is easily propagated from cuttings.

Hoheria populnea, Poplar-like Ribbon-wood.

This specimen was grown in a canyon with 15 or 20 other plants presumably all the same variety. It was 9 feet tall, 9 feet wide and full of bloom. Its branches bend down gracefully from the weight of the flowers. It seems to flower on the old wood for leaves often are alone on the ends of the branches and then again the flowers appear alone at the ends in a round-headed fluffy mass. These white flowers are most attractive with 5 sepals, 5 petals, 20 stamens and 5 or 6 stigmas. There are from 3 to 9 flowers in an umbel and at times as many as 12 flowers in the axils of each leaf. These flowers are over an inch in diameter, the petals oblique, each with a little notch toward the apex. It gives a most aerial and fairy-like effect and when in bloom is justly the pride of the garden. It is in bloom from top to the ground and still carries some of its juvenile leaves (see

*Wm. A. Mattheus**Griselinia lucida and its variegated form*

photograph on lower left corner) which are distinctly different from the mature leaves. This is one of several genera in New Zealand in which the

juvenile leaves are greatly different from the mature leaves and may pass through 2 or 3 different phases in one of which the hoheria resembles a

twisted shrubby coprosma. These canyon trees resow themselves freely, are transplanted in pots and are ready to be set out where needed.

What underplanting shall we use under the hoherias? In this case it was *Francoa ramosa* under one tree and *Gaura Lindheimeri* under another. Both are delightful as they have the same color of flower in bloom at the same time and the size and shape of the leaves are similar.

You need a good background of green to show off the hoheria flowers or at least not one that has flowers that will compete with hoheria when in bloom.

Hoheria populnea var. *Osbornii*, Osborn's Ribbon-wood.

This specimen is in full shade under eucalyptus trees in Golden Gate Park and well in bloom August 8, 1934. The flowers are in fascicles of from 35 to 40 flowers in the axil of a leaf and each individual flower is over an inch in diameter. There are five white petals and numerous lavender filaments tipped with white anthers, distinctly seen in the photograph. They flower from the lowest part of the stem upwards as you can see at the lower end of the stem where the petals have fallen off disclosing the calices rolled downward showing the star-shaped seed pod with its five wings just beginning to develop. At first glance you would not think it as floriferous as *Hoheria populnea* itself but you will notice that the leaves are much larger than the type and hide part of the flowers. This does not show in the photograph with only one spray as the petioles are really longer than the cluster of flowers.

There is another specimen of *Ho-*

heria populnea Osbornii in the same plot but planted out in the sun. It is just twice as tall as the one under the eucalyptus trees with the bloom more evenly spaced about the crown.

It seeds freely but so far I am not able to tell if the seeds are viable. Any way it is different from the type if the botanists are shy on naming all these types of hoheria.

Melicope ternata, Ternate-leaved Melicope.

Here again is a shrub with inconspicuous greenish yellow flowers but the shining light-colored leaves immediately attract attention. Next are seen the jet black seeds hanging suspended in air by their funicles. However, as grown in California, it is ornamental for its foliage only and can be used for its lively green color where a decided contrast is needed.

It grows to twenty feet in North Island, New Zealand, where it is more numerous than in South Island. This would suggest its preference in California for the southern part of the state, where at Alameda Park in Santa Barbara it is about nine feet tall and seven feet wide. At first this specimen was taken for a *Pittosporum eugenioides* which it very much resembles in color, shape and leaflets, with their crumpled edges and unusually light green foliage. Both of these plants may be used as a glorified picture with the sunshine falling on them and causing each branch and leaf to stand out in distinct beauty. Here then is a shrub that will supplement the bright color of the taller and faster-growing *Pittosporum eugenioides* tree, and Californians should not fail to make use of it for this purpose. Let us use more contrast into our planting that



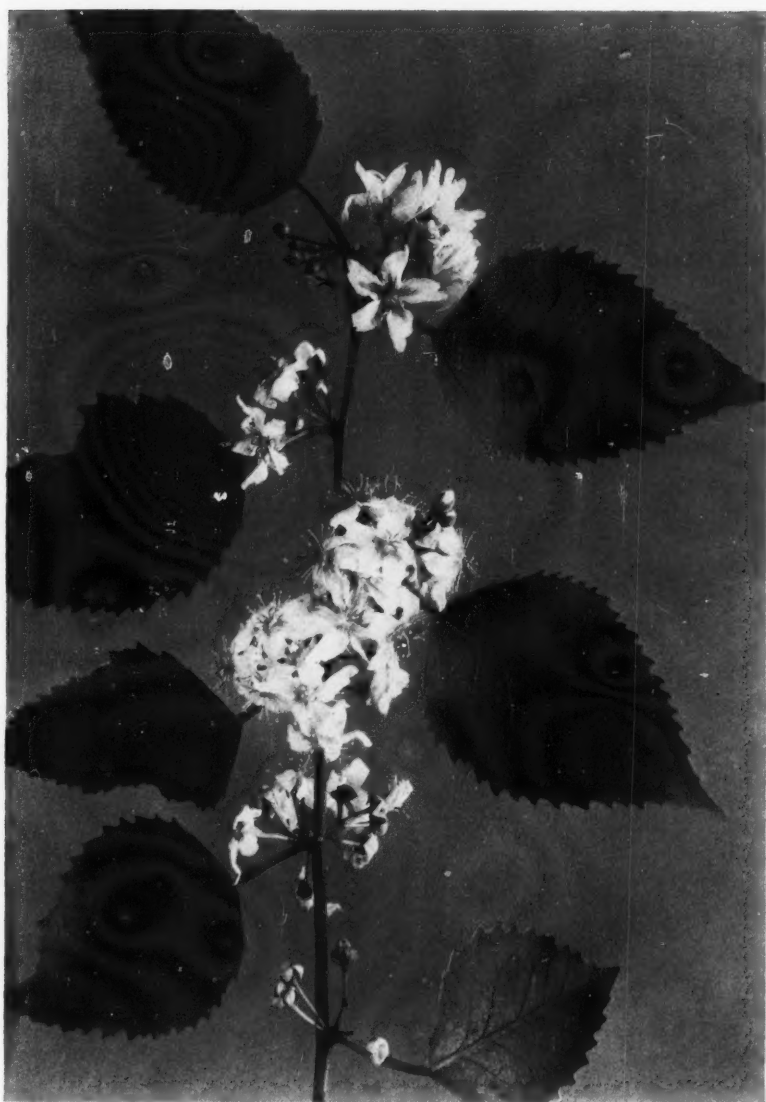
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Hebe (Veronica) Hulkeana
Pansy-leaved Veronica



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Hoheria populnea



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Hoheria populnea Osbornii

will not be so conspicuous as those commonplace variegated shrubs so much used at present.

It seems to thrive in various soils as it grows in adobe at the University of California campus and in sand in Golden Gate Park where the foliage is brighter and almost twice the size. It, therefore, probably favors soil with good drainage.

The gum of this tree was chewed by the Maoris in the days when they were cannibals. They needed something of the kind after prolonged feasts on members of some other tribe as well as on tough white sailors, cast upon their inhospitable shore by the sea!

It grows easily from seed and cuttings but needs a little more care than usual in its placement in the garden to make the best use of its rare color and its shining leaves.

Myrtus bullata, Embossed Myrtle.

In its native home it is mostly grown in North Island and the northern part of South Island so we must not expect it to be very hardy, though it climbs up to 2,000 feet. It grows in woods and no doubt needs partial shade. It has outstanding leaves, elliptical in shape, $1\frac{1}{2}$ inches long by 1 inch wide, while the surface of the leaves swell out between the veins like a "blister." Turned upside down they resemble a small boat which would hold water.

It resembles nothing else we have ever seen and would be hard to combine with other shrubs in a good mass planting. It had, therefore, best be used as a specimen shrub or as an accent plant.

In New Zealand they use it for button-hole bouquets and for cut flowers, as the leaves turn a rich bronze and

give a color effect largely lacking in their flora. So far it does not seem to have that rich color in the Bay region excepting on isolated twigs now and then. It is probably too slow-growing in California to permit its use as a cut greenery to any extent.

The flowers are said to be white and one might substitute the common myrtle flowers without much fear of detection though a New Zealand botanist would look for the minute warts on the calyx and petals, a point which one could hardly see in a photograph. I have seen no flowers on our specimens of *M. bullata* but as they only bloom for two months in the year you will get a better idea of the leaves without the flowers, which would have prevented your seeing much of the bulging out of the leaves between the veins which gives it its peculiar interest.

It is probably easily propagated as nurserymen have it on sale.

Nothofagus (Southern Beech).

The late Dr. Cockayne was always interested in the distribution of plants and especially the nothofagus or evergreen beech of New Zealand. It is also found in other countries of the Southern Hemisphere, namely Australia, Tasmania and temperate South America. Dr. Cockayne studied the different species in the field, following them from lowland to the alpine region, grew thousands of seedlings and pondered over them so long that at last he developed the bold theory that the nothofagus formerly was the dominant tree in New Zealand but the subtropical trees of Malayan origin had come in and were gradually replacing them.

To prove this theory Mr. G. Simpson and Mr. J. Scott Thomas studied

*Wm. A. Matthews**Melicope ternata*

the Silver Southern Beech (*Nothofagus Menziesii*) about Dunedin in the southern part of South Island. These men had two questions to answer:

- (1) Is the Silver Beech a new arrival or is it a survival of a former host.
- (2) To study Dr. Cockayne's theory as to the relation between the two

great classes of New Zealand rain forest—the subtropical and the subantarctic. This theory is based on the present distribution of the nothofagus forest in New Zealand and it suggests that at one time the nothofagus forest was the chief tree community; but that it has been gradually replaced by the subtropical forest of Malayan origin. To prove it they measured some old nothofagus trees as well as their secondary growth but the cut nothofagus forests plainly showed that they had once been much larger in extent. These students also found out why. It is because the subtropical rain forests take better care of their seedlings than do the nothofagus who seldom have any seedlings under the mother tree and consequently when she dies her place is taken up by the seedlings of the subtropical rain forest as these are much more aggressive than her own.

The Southern Beech is one of the few trees that forms pure forest in New Zealand. By pure forests we mean those of vast extent made up of one kind of tree. Cheeseman in his Manual of New Zealand cites 6 species of nothofagus as native to New Zealand. They are as follows: *Nothofagus apiculata*; *Blairii*; *cliffortioides*, the mountain beech; *fusca*, the red beech; *menziesii*, the silver beech; *solandri*, the black beech.

These six varieties of either trees or shrubs are said to cover a large proportion of South Island and even the central and southern portions of North Island. Their value for timber is very great and when a survey was made of these different forests by Dr. Cockayne he was startled to discover hybridization among the beech on an enormous scale so we may look shortly to an enlarged list of the forms. Dr. Cockayne took up the study sys-

tematically, visiting all the main forest groups in the field and also gathering seed and studying from seedling to adults hundreds of specimens. He came to the conclusion that hybridization occurs to an astonishing extent in this genus with *Nothofagus fusca* as one parent and *Nothofagus cliffortioides* or *Nothofagus solandri* as the other. He also found that seedlings from hybrid trees are of an exceedingly mixed character, that *N. Menziesii* does not hybridize and that *N. Blairii* is itself a comprehensive series of hybrids. He thinks that *N. cliffortioides* and *N. solandri* also cross and that *N. apiculata* certainly gives another series. *Nothofagus* belongs to the great Fagaceae or oak family with the chestnut, the true northern beech, the oak, and the chinquapin.

As these trees are still very young in Golden Gate Park we cannot give any description of their habit, rate of growth or what they will do in the different sections of California. The best I can do is to mention the localities in which they grow in New Zealand in order that you may get a hint for their growth in California. Later we shall hope to have more detailed information.

Nothofagus cliffortioides (Mountain Beech), will grow from 20 to 40 feet high and is a sub-alpine species. "In North Island in mountain districts from East Cape and Tongariro Volcano southward. In South Island it is abundant in the mountains throughout, usually forming the greater portion of the sub-alpine forests. It is from 2,000 to 4,500 feet but descending to sea-level in one or two localities in Westland and in the Sounds on the north west coast of Otago.

It is closely allied to *N. Solandri* but much smaller, with the leaves truly ovate, broadest at the base, and usually



Wm. A. Matthews

Nothofagus fusca (upper)
Nothofagus Cliffordioides (lower left)
Nothofagus Menziesii (lower right)

acute at the tip. Wood very similar to that of *N. Solandri*. Cheeseman Manual.

Nothofagus fusca, Red Beech.

"North Island. In forests from Mangonui and Kaitaia southwards, but local to the north of East Cape, 60 to 100 feet high.

"South Island. From Nelson to Foveaux Strait but rare in Canterbury and eastern Otago. Sea-level to 3,500 feet. October-December.

"A magnificent tree, undoubtedly the finest representative of the genus in New Zealand, and well marked off by the comparatively thin veined leaves with sharply toothed margins. Wood dark red, strong and compact, more durable than that of the other species, and frequently used for wharves, bridges, fencing posts, etc." Cheeseman.

"*N. fusca* is more sparsely distributed throughout the islands, being found in wetter situations. It is rarer in Canterbury Province than any other, though found in small quantities on Banks Peninsula." Laing.

Nothofagus Menziesii, Silver Beech.

"Found in sub-alpine regions from Hauraki Gulf southward." Laing.

North Island. Mountain forests from the Thames goldfields southward; but rare and local to the north of East Cape, 60 to 80 or even 100 feet.

South Island. Hilly and mountain forests from Nelson to Foveaux Strait, most plentiful on the west side of the island. Sea-level to 3,500 feet. Silver Beech. November-January.

"It is worth remarking that the tips of the branches are sometimes diseased and converted into small-branched panicle masses clothed

with fulvous scales, closely resembling a panicle inflorescence in young bud. On the undersurface of the leaves, at the junction of the main veins with the midrib, there are usually 1 to 3 curious fringed pits or domatia, very similar to those on the leaves of certain *Coprosma*." Cheeseman.

Nothofagus Solandri, Black Beech.

"A lofty forest tree 40 to 80 feet; bark black and furrowed on old trees, pale and smooth on young ones.

North and South Islands; Forests from East Cape to the south of Otago, usually in hilly or mountain districts. Sea-level to 2,500 feet.

Black Beech. Wood pale red, often streaked with black, not durable unless taken from fully mature trees. Young trees often have the leaves distichously arranged, with the undersurface glabrous or nearly so." Cheeseman.

"Oxford and Alford Forests consist almost entirely of *N. Solandri*. *Solandri* is perhaps one of the most abundant of our beeches, and forms immense forests, particularly in drier situations, throughout the islands as far north as East Cape. On the dry eastern slopes of the Canterbury ranges there is little else to be found in the forests." Laing.

Olearias.

Some of the most beautiful shrubs in New Zealand belong to this genus. They may be either trees or shrubs but here in California they will probably remain low unless excessively watered. The leaves are leathery and usually white or buff underneath.

The flowers do not usually remain in bloom long but as one of the landscape gardeners told me "In Santa Barbara we do not use them for their flowers but for their form."



Wm. A. Matthews

Olearia Haastii

OLEARIAS IN NEW ZEALAND

Dr. Cockayne says there are about 40 in New Zealand all of which are worthy of cultivation though some of them are not hardy. Those from the alpine and sub-alpine region are undoubtedly hardy and should be tried out in California. Cockayne gives the following as especially desirable for California. I have starred (*) the ones growing in California.

Olearia

**albida*, half hardy.

**arborescens* (Syn. *O. nitida*).

**avicenniaefolia*.

Cunninghamii, forest tree, only half hardy.

cymbifolia.

excorticata.

Forsteri (paniculata).

fragrantissima, deciduous.

**furfuracea*.

**Haastii*, similar to *O. moschata* but larger leaves.

Hectori, deciduous, fairly hardy but needs a moist shady place.

**ilicifolia*, makes excellent hedge.

lacunosa, a remarkable species with stiff linear-narrow 4 to 7 inches long, which beneath, through the raised midrib and numerous lateral veins, have the surface divided into sunken interspaces.

lineata (Syn. *virgata* var. *lineata*).

**macradonta*, makes an excellent hedge.

moschata, leaves white on both surfaces.

**nummularifolia*, with extremely thick, small roundish leaves.

**oleifolia*, like a small-leaved form of *O. avicenniaefolia*.

**paniculata* (Syn. *O. Forsteri*), makes an excellent hedge.

suavis.

**Traversii*, makes an excellent hedge, shelter plant and sand-dune reclamation.

Besides the above Dr. Cockayne gives 7 with large flowers that are not hardy as they require a moist equable climate, and are not suited to ordinary garden conditions:

Olearia

angustifolia, not hardy.

chathamica.

Colensoi.

Lyallii.

operina.

semidentata, a delightful species, florets of the most brilliant purple imaginable, and a truly magnificent species.

Traillii.

Olearia Haastii, Haast's *Olearia*.

When you speak of *Olearias* in New Zealand this is what you should visualize for it is this type of a flower that gives delight in the charming meadows of the mountain regions. In July, 1933, this plant was 3 feet tall and 4 feet wide and so full of bloom that one could hardly see the leaves, which are a peculiar sage-green above and white tomentose beneath. These flowers stand up thick and compact above the leaves in a sheet of white that follows the shape of the shrub. It is neat and compact even out of bloom, for you cannot see the main stems on account of the numerous leaves. It seems to bloom on the new wood, which is really not more than 2 inches long. The flowers have white rays, 5 or 6 in number, and have 3 or 4 crinkles the long way of the petals, which makes it interesting for close inspection. The achenes are said to be narrow, grooved and pubescent. It either blooms several times a year or it has a long blooming period. The



Wm. A. Matthews

Olearia paniculata

leaves are small, $\frac{3}{4}$ of an inch long and over half an inch wide, which is a little too small for most of the shrub groups we have here in California.

Easily propagated by cuttings. Get a cutting and start it.

Olearia paniculata, Foster's Olearia (Syn. *Olearia Forsteri*).

Just look at this ugly picture! I had always known that some people never photographed well and now I know some plants do not, for other photographs of this plant tell the same story. A tiny spray like this does not begin to reveal to you its glorious golden color, its compact habit and its semi-formal habit. But it is also picturesque, or can be made so by judicious pruning, as the trunks lean in different directions at a good angle.

The leaves are a much lighter color than ordinary ones and charmingly crinkled on the margins in an interesting way. Also the way the branches show light and dark contrasts are most pleasing to an artist who can thus get some character into his picture.

The flowers are really not at all conspicuous on the tree, and even if they were they do not hold on long. You see in nature very few of them are in sight as the leaves hide them and those that do happen to show are so nearly the same color as the leaves that they hardly are noticed. The trunk has vertical lines which draw the eye upwards and the branches droop enough to be graceful.

It is called a *hardy* plant but I am told that while it will do well along the coastal belt of California it is not really hardy in the San Joaquin Valley. Anyway it can be used in a planting where you want a decided contrast to the dark green and it does not have the startling look of some of the vari-

egated plants so common in California planting.

Olearia Traversii, Traver's Olearia.

Here is a tree to 30 feet tall that has beautiful thick, dark-green leaves quite suitable to make a good background for a daisy-like flower but somehow nature greatly disappoints us for she has suppressed the white ray flowers and left these dismal greenish-yellow disk flowers to compete with such beauties as *Olearia Haastii* with its numerous charming ray flowers. But *O. Traversii* is making the best of her leaves, as the photograph shows, as she turns up the silky gray underside in full sight "like foam on the ocean." Such a tree that alternately shows the dark and the white surfaces of its leaves is called a restless tree by landscape men, who seldom plant them, but the New Zealanders appreciate them and if placed in a position where one looks out to sea in a wild storm, it might be most impressive. It is much used as a shelter tree for more tender plants that cannot stand the salt spray of the ocean. It is therefore recommended for use for a seacoast planting as the first line of defense and also as a hedge plant.

It is the only olearia with opposite leaves and is sometimes confused with corokia but that always has alternate leaves.

PITTOSPORUM FAMILY

Of the nine genera belonging to the Pittosporum Family, five of them are known to be cultivated in California, viz.: Billardiera, Bursaria, Hymenosporum, Sollya and Pittosporum. All of the nine genera are *limited* to Australia excepting the Pittosporums, which are also found in Africa, New

*Wm. A. Matthews**Olearia Traversii*

Zealand and some of the Pacific Islands.

All the Pittosporums native of New Zealand have red or almost black flowers excepting *P. eugenioides*, in

which they are a light yellow or some years they are greenish. It will not be hard therefore to remember which ones are native to New Zealand.

Pittosporum crassifolium, Karo.

This has thick, leathery leaves well able to cope with seacoast conditions and makes a good shelter belt in regions not too inhospitable for its growth. It seems to do very well in Sacramento but does not appear on my records for Stockton although San Jose is growing it. However, its best use seems to be on the seashore where it makes an excellent hedge as it stands both wind and a salt spray. It also grows well in the shade, even shooting up faster in shade on the University grounds. It is good in mass planting but may need another variety of shrub now and then to break its somber appearance. *Hebe elliptica* looked fairly well with it, but better yet was *Feijoa sellowiana*. When in bloom in the spring there is a brighter touch to the specimen, even if the flowers are only a dull red.

Propagated by seeds which must be left in the sun for a few days to melt off the pitch about the seeds or they may be rubbed in coarse sand to remove this same pitch.

In the illustration note the heavy leaves with the edges rolled under, the white hairs on the new leaves to protect them from winter cold and the shape and size of the flowers. This photograph is about two-thirds the natural size.

Pittosporum eugenioides, Tarta.

This photograph was taken at the height of bloom and shown how much more effective yellow looks in a photograph than red. The flowers come out on the ends of the branches and are of good fragrance, penetrating and yet mild; quite intoxicatingly so to some people. But to me it is the leaves that make up the charm of this *Pittosporum* for they are a very light

green which looks like a burst of sunshine when the sun's rays fall upon it and will glorify any garden if it can be allowed to dispel the gloom by its lighter color. I wonder that home makers do not give more the light and shade effects that can be made in a garden by such trees when properly placed. This is not the only New Zealand tree that has this color for *Olea-ria paniculata elliptica* so-called is another of the same type as *P. eugenioides* but the leaves are a little larger, though with the same wavy-margined effect.

When the seed capsules have formed the effect is almost as effective as the flowers in bloom, though of course quite different. As long as they remain full and green they seem a part of the decoration of the tree but when the pods later grow brown or black they are not so attractive.

Here again is a hedge plant, much narrower in width than many other varieties. It is a little difficult to combine with many of our garden shrubs or even with the lawn, for there is not enough contrast between their color to be pleasing or one or the other sinks into the background and loses its character. Usually propagated by seeds.

Pittosporum Fairchildii.

This plant was bought for a *Pittosporum Buchanani* but has more of the character of *Pittosporum Fairchildii* according to Cheeseman's key. The late Dr. Cockayne, who did so much field work in New Zealand and knows these plants first hand, wrote to a California botanist that neither *P. Buchanani* nor *P. Fairchildii* have any permanent value. My poor plant according to this, therefore, would be



Wm. A. Matthews

Pittosporum crassifolium

nameless or perhaps is a hybrid. Such cases are not rare and is a living example of what cultivated plants are coming to if nurserymen do not stop

gathering seeds that are not reasonably pure. These hybrid offspring lose their character and before long everything will be topsy-turvy. There will

*Wm. A. Matthews**Pittosporum eugenoides*

be so many grandparents that the botanist will refuse to name them and in the end landscape gardeners when desiring a certain species will have to go

to the nursery in person and point out the plant he wants.

Anyway my nameless plant is quite good-looking, even if the photograph

*Wm. A. Matthews**Pittosporum Fairchildii*

does not say so. It is 15 feet tall, 10 feet wide, has leaves over three inches long in good clusters that hide the stems. The leaves are very like those

of *P. umbellatum* from Australia but the fruit is larger and has three valves, while the former generally has but two.

THE MALLOW FAMILY

This is represented in New Zealand by four genera.

Plagianthus with deciduous leaves, dioecious flowers which are not at all attractive and juvenile leaves quite different from those of the adult. Called Ribbon-wood. Native only to New Zealand and Australia.

Hoheria, the species of which are confined to New Zealand and much dispute as to whether it has one species with several varieties or whether these varieties may also be classed as true species. A native of New Zealand only.

Gaya Lyallii now placed among the *Hoherias*. Lacebark. It is found in the sub-alpine forests of South Island as a fringe about their beech trees. Of twelve species all but this one are in South America.

Hibiscus, of which but two species are found in New Zealand, in sheltered places near the sea. They are now practically extinct as they are being destroyed by cattle and by fire.

Plagianthus betulinus, Birch-like Ribbonwood.

Scientists long since came to the conclusion that the individual animal passes through the same stages of development that its ancestors have passed through and that this law also applies to plants. According to Laing & Blackwell in "Plants of New Zealand," *plagianthus* is interesting as "it shows three stages before reaching the mature form. The first stage has the young plant erect and the leaves somewhat similar to those of the mature form. Then the seedlings change. The branches become long, drooping, twiggy, flexuous and of a red-brown

color. The leaves very much reduced in size, and very variable in shape. It now resembles one of the scrub *Coprosmas*. In its third and mature form this plant is a handsome, graceful tree with large alternate leaves." In the photograph note the juvenile leaves on the right.

This species seems to do well in California and grows from 25 to 30 feet. They have the typical greenish-yellow flowers of the New Zealand forest trees, very small and quite insignificant. They seem foreign to our eyes and are grown for their historical interest and their unusual appearance rather than their beauty.

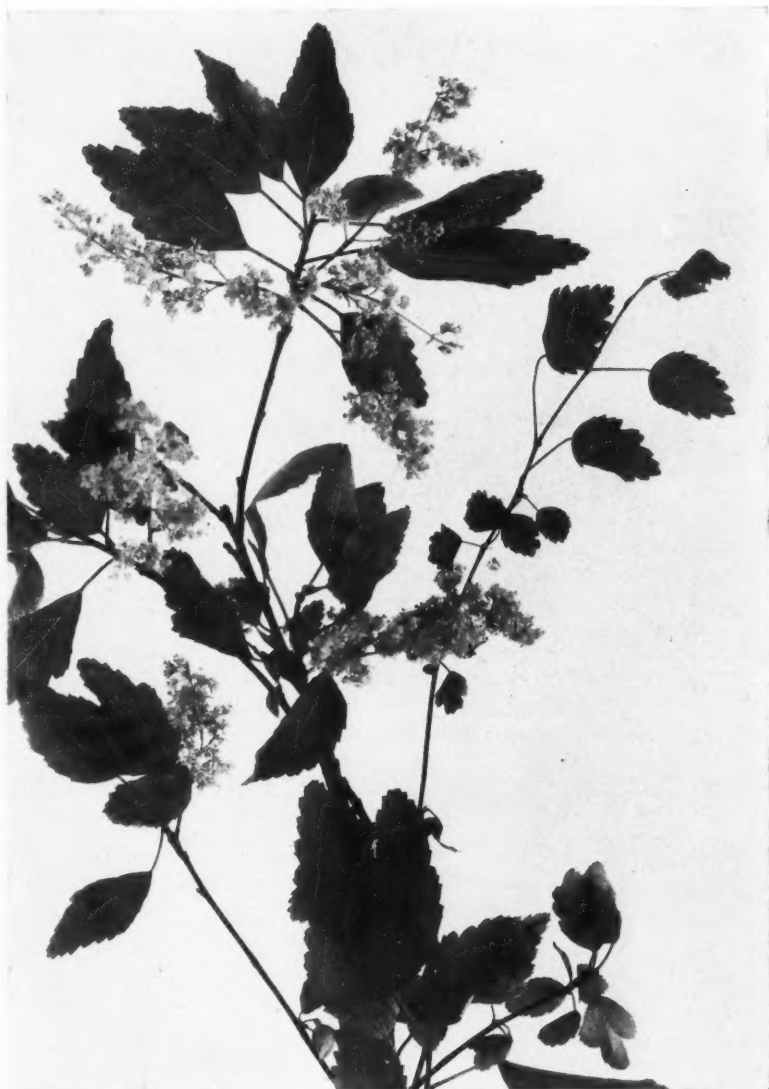
In New Zealand they are economically useful as the inner bark is used by the Maoris to make ropes and twine for their fishing nets, since it is noted for its strength and its beauty. The colonists also used it as a substitute for raphia and the women make it into all sorts of ornaments.

It grows in North and South Islands, in Stewart Island and in Chatham Island, in lowland forests and ascends to 1,500 feet.

BUCKTHORN FAMILY

Although this family is distributed over the most of the world it has but two genera native in New Zealand. *Pomaderris* with five species and *Discaria* with one species. We have a record of the following *Pomaderris* grown in California: *P. apetala*, *P. elliptica*, *P. phyllaefolia* and *P. rugosa*.

The *Discaria Toumatou* is mentioned by Reeves as the Wild Irishman growing on the mountain valleys whose thorny spine made riding on horseback quite difficult. It is the plant, also, which was used by Dr. Cockayne in his classic experiment proving that *discaria* was originally a

*Wm. A. Matthews**Plagianthus betulinus*

spineless leafy plant adapted to a moist habit. "As now found wild in New Zealand it has small deciduous leaves and hard tough spines. Dr. Cockayne's

seedling plants were erect, leafy and had no spines. When about 2 inches tall they began to develop spines in the leaf axils. If the plant was now



Wm. A. Matthews

Pomaderris elliptica



Wm. A. Matthews

Senecio compactus

placed in a moist chamber no more spines were formed and the leaves were retained. The plant returns to its seedling form and seems to prove that a complete suppression of the thorns are possible."

Pomaderris elliptica.

Of the five species of *Pomaderris* native to New Zealand is the only one that has flowers with petals. All the others, therefore, should have beautiful foliage to make up for the defect in its flowers. It grows from 4 to 8 feet tall and the young branches, petioles and under side of the leaves are covered with buff hairs. It has an interesting round-headed form with buds that hold much promise for future bloom. We watch these buds for some weeks and are at last rewarded by seeing their pleasing light-yellow flowers which bloom for some weeks, and are afterward followed by clusters of tiny fruit that also have a fascination of their own, though the whole shrub now gives the garden a lower scale in color.

It might be very useful for California because of its winter and spring bloom when little else is in sight. So far at Golden Gate Park it is a round-headed, low shrub which gives color in winter, has a pleasing compact habit, at least while young, which some of our gay grevilleas do not. At home they are considered a very ornamental plant.

It grows in Auckland in North Island and open clay hills from East Cape to the west coast, and would therefore probably be too tender to use in the Great Interior Valley.

Senecio compactus.

This is a small, compact-looking

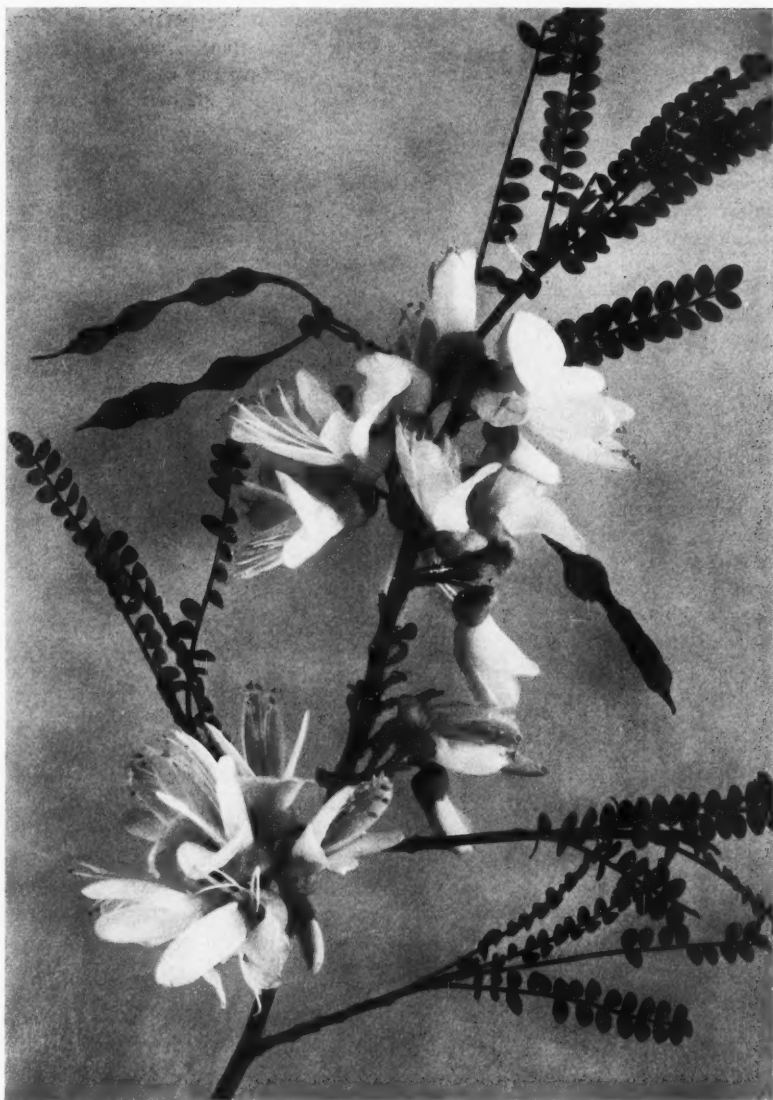
plant about 3 feet tall and 5 feet wide, apparently helping itself to new space as it grows. It would always attract attention whether in bloom or not, because its stems, undersurface of leaves and involucre are white with a densely close tomentum. Its flowers are all yellow, ray as well as disc flowers, and are large but distant enough not to be crowded in their development.

The buds look like little sculptured beads with the involucre folded tightly over the flower heads. They are almost as interesting as the flowers. The rays are a bright luminous yellow and the disc flowers about the same color. Even when out of bloom the gray foliage seems to fit into the drought-tolerant plants of our native shrubs and similar gray-colored plants. The flowers are in racemes lax enough to make a bright color but there are also enough leaves in sight at the same time to help to tone down the glare of the yellow.

It was in bloom in July, the flowers about 1½ inches in diameter. It is found at North Island near Wellington on limestone cliffs—a very restricted location, but it is certainly doing very well at Golden Gate Park in sandy soil.

Sophora tetraptera, Four-winged Sophora (*Edwardsia grandiflora*).

This is usually a shrub here in California but in New Zealand it grows to 30 or 40 feet when mature. It usually blooms in February, March and April in the Bay region—for about two months. It groups well with Redwood (*Sequoia sempervirens*) as both have dark leaves that bring out the color of the beautiful yellow pea-shaped flowers. It is used in mass planting or as a specimen plant where it gives both color and a light airy air



Wm. A. Matthews

Sophora tetraptera

to a group. When out of bloom the four-winged pods are interesting. They are brown and strung along like beads, somewhat resembling the little com-

pound leaves. In New Zealand when the flowers are in full bloom it is hard to keep the birds from destroying them to get at the honey. Instead of

sipping daintly as our humming-birds would do, their parrots tear open the flowers in their hurry to get at the honey. When the sophora are in bloom the Maoris know it is time to plant their potatoes.

The wood of this tree is said to be handsome and very durable under ground. It might then be used as pergola posts and fence posts if we could find a location that could grow it quickly.

This is said to be the national flower of New Zealand and their poets write about it more than about any other of their native plants.

Plant it in the sun with good loamy soil, though it thrives well in Golden Gate Park in sandy soil. It is rather tender and will not stand much frost, as you must expect coming from warm North Island of New Zealand. Easily propagated by seeds.

Suttonia australis (Syn. *Myrsine australis*) (Syn. *Rapanea urvillei*).

On coming across this wavy-margined leaf with its tiny greenish flowers toward the close of a day in September, I at once shouted "New Zealand" and promptly gathered this specimen. I had seen it before but was not much attracted on account of its quiet color until I saw it in bloom. It reminded me of a little brown mouse, retiring, yet withal somewhat familiar as to type.

It is about 13 feet high and had a New Zealand green shade of color with yellow-green small flowers in the axils of the leaves and also on buds along the stem underneath. The leaves are $1\frac{1}{2}$ to $1\frac{3}{4}$ inches long, oblong in shape and with undulate margins. The male flowers have four fat stamens with an abortive ovary, the anthers

larger than the petals. The female flowers are smaller, with small empty anthers, while the ovary has a large sessile fringed stigma. The fruit is small and black when ripe.

In appearance this shrub resembles *Pittosporum tenuifolium*, even to the black stems, and can be grouped with *Pittosporum eugenioides* or *Olea-ria paniculata*, though it is darker color than either.

Vitex lucens, New Zealand Oak.

This is said to be the most valuable broad-leaved evergreen tree in New Zealand—a so-called teakwood to be used where great strength and durability are required.

It is said to be slow-growing but a specimen in Golden Gate Park, planted about 1915, is now 25 feet tall and has a spread of 13 feet. It is growing well in sandy soil. It is said to be shallow-rooted and easily blown over in the wind but it is so well protected by the surrounding trees and shrubs here that the wind cannot harm it. The fierce winds of New Zealand have been known to blow railroad trains off the track so why worry here.

It is really a very handsome tree with its glossy leaves which are typically with five leaflets, though as a rule the young leaves protecting the flower clusters have only three leaflets. This is why the photograph has two kinds of leaves which shows this point but not that of the beauty of the tree.

The flowers are a deep pink, about an inch long and arranged in panicles that branch dicotomously, each panicle having both flower buds and fruit in various stages of growth. There are sometimes as many as seven to seventeen flowers on the same panicle. There flowers are partially hid-



Wm. A. Matthews

Suttonia australis

den by the young leaves but are abundant and almost continuously in bloom so that their contrast with the handsome green leaves is always noteworthy.

The fruit—a bright red drupe—is about as large as a cherry. It seldom has more than one or two seeds and the core of the fruit is a hard bony top-shaped affair with projections at one end. Although it is almost continuously in bloom there are times when the flowers are more abundant than at others, say in July and September in Golden Gate Park.

Vitex lucens grows in the tropical part of North Island from sea level up to 2,500 feet and we should not, therefore, expect it to do well in all parts of California. Southern California should be able to grow it but probably not the great San Joaquin Valley.

Characteristics of New Zealand Flora from Laing and Blackwell* and various other sources:

1. The forests are gloomy, mostly of leathery evergreen trees and generally with inconspicuous flowers.
2. It is peculiar in having mostly greenish, white or purple flowers.
3. Stamens and pistils mostly on different individuals, i. e., flowers dioecious.
4. Some of the families that are always herbs in the Northern Hemisphere contain trees or shrubs in New Zealand.
5. Their perennials do not die down to the ground as they do in northern hemispheres but are evergreen and often have long hairs on the underside of the leaves.
6. Plants are apt to be tender, will not stand much frost below 15 degrees Fahrenheit.
7. New Zealand plants in general require moisture.

New Zealand has fourteen hundred flowering plants, mostly endemic but part of them are also found in Australia and part of them in South America. This leads students to think there was formerly a land connection.

New Zealand Flora is diverse due to:

1. A long coast line.
2. To high mountains.
3. Its varied climate.
4. Its proximity to the sea and to perpetual snow, only 30 miles from sea level to snow on the mountains.

Preliminary Report of NEW ZEALAND PLANTS GROWING IN GOLDEN GATE PARK taken from my field notes of a number of years. I may have overlooked others. The figures after the names indicate the ultimate size, these plants grow in New Zealand as given by Cheeseman's Manual of New Zealand. Flora, T = tree; sh. = shrub; herb = perennial herb.

Ackama rosaeifolia, 20-40 ft., T.

Agathis australis, 80-100 ft., T.

Alectryon excelsum, N. Z. Ash, 30-60 ft., T.

Angelica rosaeifolia, white fls. Mar. 27/31, herb.

Aristotelia Colensoi, 6-15 ft. sh.

Arthropodium cirrhatum, resembles a small *Phormium tenax*, herb.

Brachyglottis rangiora, 12-14 ft., sh.

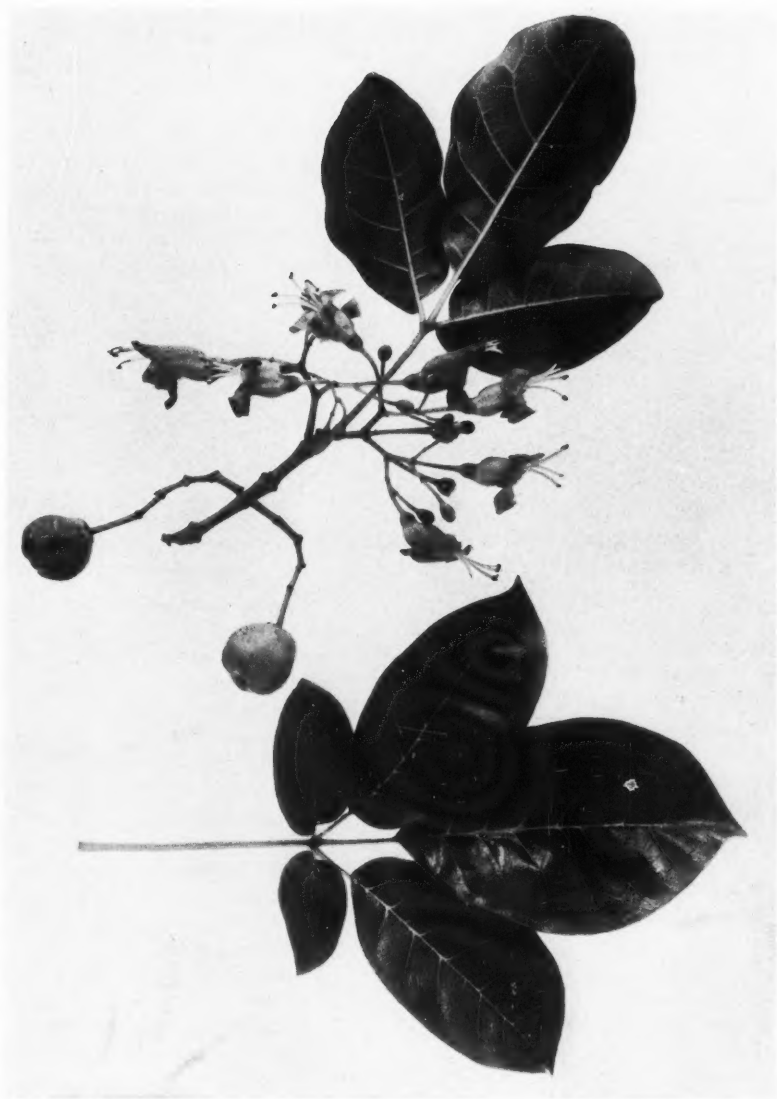
Brachyglottis repanda, 8-20 ft., from sea-level to 2,800 ft., both islands, sh.

Brachyglottis repanda variegata, sh.

Carmichaelia australis, 3-12 ft., from sea-level to 2,500 ft., both islands, sh.

Carmichaelia odorata, in bloom Aug. 28/30, June 23/33, has small leaves on it now and old pods but no flowers. The one in nursery has tiny leaves and is also in bloom Aug. 20/34; sh.

*Laing and Blackwell, "Plants of New Zealand."



Wm. A. Matthews

Vitex lucens

- Carmichaelia Williamsii*, 6-12 ft., sh.
Cassinia fulvida, 2-6 ft., sh.
Cassinia leptophylla, 5-12 ft., North and upper South Islands, sh.
Cassinia vauvilliersii albida, 2-8 ft., from East Cape to Taupo southward, sh.
Celmisia coriacea, 3 ft., in bloom Mar. 27/31, leaves striped white and green, pointed and Agava-like, near gate, per. h.
Coprosma Baueri, 25 ft. or more unless exposed, then only 1-3 ft., sh.
Coprosma Baueri albo-marginata, sh.
Coprosma Cunninghamii, 6-15 ft., common in swampy lowland in rich soil, sh.
Coprosma Kirkii, makes a good ground cover, spreads quickly and lies flat, sh.
Coprosma rotundifolia, 4-12 ft., in damp forests and side of rivers, sh.
Coprosma rugosa, 4-10 ft., South Island, branches often interlaced, sh.
Coprosma parviflora, 4-15 ft., both islands, abundant throughout, sh.
Cordyline australis, 15-40 ft., but variable in size, also bronze varieties, T.
Cordyline indivisa, 5-25 ft., by far the finest species of the genus, T.
Corokia buddleoides, 6-12 ft., North Island, often in woods, sh.
Corokia buddleoides, linearis, Leaves narrower, sh.
Corokia cotoneaster, 4-8 ft., North and South Islands, throughout both, sh.
Corokia macrocarpa, 15-20 ft., Broader leaves than buddleoides, sh.
Clematis indivisa, covering small trees, both islands throughout to 2,500 ft., vine.
Corynocarpus laevigata, 30-50 ft., the pulp is edible but the seed is highly poisonous, unless steamed or steeped in salt water, T.
Dacrydium cupressinum, 60-80 or even 100 ft., abundant in forests of both islands, T.
Drimys axillaris, 12-25 ft., T.
Dodonaea viscosa, 8-20 ft., hardy throughout California—even in desert, sh.
Dysoxylum spectabile, 25-50 ft., Meliaceae Family, T.
Elaeocarpus dentatus, 40-60 ft., T.
Elaeocarpus Hookerianus, 20-40 ft., T.
Entelea arborescens, 8-20 ft., sh.
Fuchsia excorticata, 40 ft., T.
Griselinia littoralis, 30-50 ft., T.
Griselinia lucida, 3-25 ft., Epiphyte on trees, sh.
Gaya Lyallii = *Hoheria Lyallii*, the eastern downy-leaved plant, T.
Gaya Lyallii glabrata = *Hoheria Hoheria Lyallii glabrata*, T.
Gaya Lyallii rubifolia = *Hoheria Lyallii rubifolia*, T.
Hebe (Old *Veronica*), Sh.
acutiflora, small shrub.
albicans, 2-4 ft.
amabilis, 6-15 ft.
Andersonii, hybrid.
Andersonii variegata.
angustifolia, 5-8 ft.
anomala, 3-5 ft.
Balfouriana, 3 ft.
Barkeri, stout shrub.
Bollonsii, 3-5 ft.
buxifolia, 1-5 ft.
carnea, hybrid.
chathamica, trailing.
chathamica erecta, but Cheeseman makes *erecta* a species, 6-18 in.
Colensoi, 9-18 in.
Darwiniana, small shrub.
decumbens, 1-3 ft.
diosmaefolia, 2-5-15 ft.
divergens, 2-5 ft.
Dorrien-Smithii, small shrub.
elliptica Autumn Glory, very long blooming.
elliptica odorata.
pinguifolia, 6 in. to 4 ft.
gracillima, much branched.
Hookeriana (*Veronica nevalis*), white flowers in bloom May 24/33, herb.

- hulkeana*, 1-3 ft.
laevis, 1-5 ft.
latiseppala (Cheeseman puts it *macrocarpa latiseppala*).
leiophylla, 4-12 ft.
leiophylla strictissima (Cheeseman thinks Kirk's *H. parviflora* var. *strictissima* and that it is only a state).
Lewisii, 3-6 ft.
macroura, 1-5 ft.
Matthewsii, 2-4 ft.
monticola, 3-12 ft.
parviflora, 6-20 ft.
pimeleoides, 3-18 in.
pinguifolia, 6 in. to 4 ft.
Rakaiensis (Cheeseman and Armstrong differ here).
rigidula, 6-24 in.
rotundata, 2-6 ft.
rupicola, 1-4 ft.
salicifolia, 5-12 ft.
salicifolia var. *Atkinsoni*.
salicifolia var. *communis*.
salicifolia var. *longiracemosa*.
salicifolia paludosa.
speciosa imperialis, a hybrid (?) 2-5 ft.
subalpina, 3-6 ft.
Townsoni, 3-6 ft.
Traversii, small.
Traversii elegans.
vernica, 1-3 ft.
Hedycarya arborea, to 40 ft., T.
Hoheria populnea, 12-30 ft., T.
Hoheria populnea Osbornii, in bloom Aug. 19/30, out of bloom Sept. 18/34; Eric Walther says propagation by grafting, T.
Hoheria angustifolia, 12-25 ft., T.
Hoheria sexstylota, 12-25 ft., T.
Hymenanthera chathamica, in bloom May 24/33, sh.
Hymenanthera novae-zelandiae, 3-10 ft., sh.
Hymenanthera obovata, 4-12 ft., Violet Family, sh.
Hymenanthera Traversii, says Index Kewensis but not Cheeseman, sh.
Laurelia novae-zelandiae, 80-100-120 ft., T.
Libocedrus doniana, 30-70 ft., T.
Litsaea calicaris, 30-40 ft., T.
Leptospermum ericoides, 20-60 ft., T.
Melicope ternata, 12-20 ft., sh.
Melicytus ramiflorus 20-30 ft., T.
Meryta Sinclairii, 8-25 ft., T.
Metrosideros Colensoi, slender climbing shrub, sh.
Metrosideros robusta, 60-100 ft., strangler, T.
Metrosideros scandens, woody climber, vine.
Metrosideros Parkinsonii, 20-30 ft., T.
Metrosideros tomentosa, 30-70 ft., T.
Myoporum laetum, 8-25 ft., T.
Myrsine urvillei = *Suttonia australis*.
Myrsine salicina = *Suttonia salicina*.
Myrtus bullata, 10-15 ft., sh.
Myrtus obcordata, 5-15 ft., sh.
Myrtus Ralphii, 6-15 ft., sh.
Myrtus pedunculata, 5-15 ft., sh.
Nothofagus cliffortioides, 20-40 ft., T.
Nothofagus fusca, 60-100 ft., T.
Nothofagus Menziesii, 60-100 ft., T.
Nothofagus Solandri, 40-80 ft., T.
Nothopanax arboreum, 12-25 ft., T.
Olea lanceolata, 20-50 ft., T.
Olea montana, 20-50 ft., T.
Olearia
albida, is tall and fast growing, may be placed in the background in small gardens.
angulata, 12 ft., in New Zealand, it has a rich shining leaf, seems to have promise, am rather pleased with it.
arborescens, to 12 ft., sh.
arborescens angustifolia, small narrow petals.
arborescens capillaris, small, stout or slender, sparingly branched.
avicenniaefolia, 8-20 ft.
Cunninghamii, 8-25 ft., Dr. Cockayne said half-hardy, T.

Cunninghamii purpurea (?) so received, Hortus gives *O. C. colorata*.

fragrantissima, to 15 ft., sh.

furfuracea the least attractive one in the trial garden as the leaves have burned.

Haastii, good for small home grounds, blooms for a long time and does not outgrow its position.

ilicifolia, Holly-leaved, 5-20 ft.

lineata, weak and spindly. Flowers in clusters when in bloom but it needs a good background as its leaves are scant.

nummulariifolia, it is for a small home ground if it will keep its low size, it is semi-formal and would do for a naturalistic setting or in a semi-formal position on large estates.

odorata, to 12 ft. in New Zealand.

leifolia, for small home grounds as it is similar to *Hasstii* but with pointed leaves.

pachyphylla, to 8 ft., sh.

paniculata (old *Forsteri*), very pleasing in shape of leaves and in their color. Does well in Bay Region.

paniculata elliptica, this has wavy leaves of good size and shape and a golden color which can be substituted for *Pittosporum eugenioides* when you desire a good accent plant.

Solandri, to 15 ft., in bloom Aug. 19/30., sh.

suavis, to 18 ft. tall, yellowish to entum on lower side of leaves.

Thomsonii, this has good rich leaves and the usual daisy-like flowers, the foliage is especially attractive in texture and its medium sized leaves make it desirable with those of many of our shrubs.

Traversii, 15-30 ft. tall, flowers hopeless, must be used for its foliage as windbreak and hedges, T.

virgata, Laing says this plant in its mature form resembles the *Coprosma* type which form the impenetrable SCRUB in parts of N. Z., does that sound promising?

Ourisia macrophylla, charming rock garden plants from alpine, Dr. Cockayne says they require moist soil, good drainage and a fair amount of shade, herb.

Pennantia corymbosa, 15-30 ft., T.

Pachystegia insignis, one of the show plants of N. Z. and in general appearance Cheeseman says it is singularly attractive, sh.

Persoonia toru, 15-30-40 ft., found only in the north of North Island. T.

Phyllocladus alpinus, 9 in. high.

Phyllocladus trichomanoides, strange tree that drops its leaves, flattens its branches to perform the function of leaves, T.

Pisonia Brunoniana, 12-20 ft., also in Australia. Small birds are often found glued down by the feathers to the fruit of this tree and cannot free themselves, sh.

Pittosporum crassifolium, especially desirable along the seacoast, T.

Pittosporum eugenioides, rather hardy as it grows in Sacramento and parts of the San Joaquin Valley, T.

Pittosporum Ralphii, hard to keep pure as it hybridizes freely, sh.

Pittosporum tenuifolium, abundant in N. Z. from north to south and up to 3,000 feet, T.

Pittosporum tenuifolium variegatum, a Silver variegation, not bad as a variegated plant.

Plagianthus betulinus, 30-60 ft., "not a valuable garden plant," T.

Plagianthus Lyallii glabrata = *Hoheria Lyallii glabrata*.

Podocarpus acutifolius, 5-30 ft., in the warm northern part of South Island, T.

- Podocarpus dacrydioides*, 100-120 ft., the White pine, which is the tallest tree in N. Z.; in lowland forests from sealevel to 2,000 ft., T.
- Podocarpus nivalis*, 2-8 ft., abundant in subalpine localities from the sides of Tongariro Volcano through all of South Island, sh.
- Podocarpus spicatus*, 40-80 ft., in forests from North Cape southward and from sea-level to 2,000 feet; this does not have the double fruit of the other *Podocarpus*, T.
- Podocarpus totara*, 40-80-100 ft., and a great success in Santa Barbara as well as in Bay Region, T.
- Pseudopanax Chathamicum*, 20-25 ft., Chatham Islands and in woods throughout the islands, T.
- Pseudopanax crassifolium*, 50 ft., its juvenile form is so different from that of the mature tree that one can hardly bear to have them in the garden in their awkward growing state; but they are worth the painful waiting for the mature trees are very handsome, T.
- Pseudopanax crassifolium trifoliolatum*, leaves with three to five leaflets.
- Pseudopanax discolor*, 6-15 ft., in Auckland Province from sea-level to 2,800 feet, sh.
- Pseudopanax ferox*, 12-20 ft., it has a wide distribution in North and South Islands but never in large quantities, sh.
- Pseudopanax Lessonii*, 8-20 ft., in North Island in its warm northern part down to Lake Taupo, sh.
- Rhipogonum scandens*, Supple Jack, the worst pest in the mixed forest, vine.
- Rhopalostylis sapida*, Nikau Palm, 10-25 ft. high, abundant throughout North Island in all but the mountains and in South Island in its northern part, T.
- Rubus Schmidelioides*, Schmidelia-like Bramble, flowers Oct.-Nov. in N. Z., sh.
- Schefflera digitata*, 10-25 ft., the Maoris were able to make fire by rubbing vigorously the pointed stick of *Pennantia corymbosa* over the flat side of a stick of *Schefflera digitata*, T.
- Senecio compactus*, 6-30 ft., in bloom Sept. 18/34 North Island at Wellington on Limestone cliffs, also does well in Golden Gate Park in sandy soil and in Berkeley in ordinary garden loam, sh.
- Senecio Greyii*, 2-8 ft., a handsome species, sh.
- Senecio Hectori*, 6-12 ft. high, Cheeseman calls this the finest of the genus; South Island in Nelson and Westland, therefore in mild localities, sh.
- Senecio remotifolius*, 4-6 ft. high, with large broad leaves; found in open rocky places in North Island, sh.
- Senecio rotundifolius*, 6-30 ft. high, very abundant along coast of both islands; its leaves are orbicular with pale buff hairs beneath; quite handsome and striking, T.
- Suttonia australis* (Syn. *Myrsine urvillei*), typical N. Z. looking, 10-20 ft.
- Vitex lucens*, 40-60 ft., in northern part of North Island; valuable hard wood, T.
- Weinmannia racemosa*, 50-80 ft., plentiful in forests from the south of Auckland Peninsula southward, from sea-level to 3,000 feet, T.

In order to find what New Zealand plants were already growing in the different sections of California I made out a list of the ornamental trees, shrubs and perennial herbs of New Zealand and sent it to leading horticulturalists of the state and others in

order to find out what ones were already being grown, their culture, propagation and care. The following replies will interest Californians and I hope will give other readers of THE NATIONAL HORTICULTURAL MAGAZINE a slight idea of the problems involved in trying to grow plants, not only of the difficult New Zealand ones, but those from nearly every country in the world. These plants we must patiently learn to grow in our different kinds of soil and under various climatic conditions.

Coolidge Rare Plant Garden, East Pasadena, Calif., report that they have not tried out a great many of the New Zealand plants but grew a few olearias, senecios, veronicas but due to their inconspicuous flowers compared with those from Australia they found them poor sellers. They are discouraged from attempting many more of them as they tried out 200 packets of New Zealand seeds and not one grew. Included in the lot were *Celmias*, *coprosmas*, *cordyline* and *olearias*.

Mr. F. N. Evans, Landscape Architect of Sacramento supplies nearly 30 New Zealand plants from that region, one of them being *Dodonaea viscosa* which seems to do well in all parts of California, even in the desert.

Mr. Hugh Evans, of Santa Monica has grown far more New Zealand plants than he cares to recommend which are as follows:

Agathis australis, *Alseuosmia macrophylla*, *Coprosma baueri*, *Cordylenes*, *Entelea arborescens*, *Homalanthus polyandrus*, *Leptospermum scoparium*, *Leptospermum ericoides*, *Metrosideros*, and *Vitex lucens*.

Mr. Harry L. Holmes and Mr. Anderson of Bakersfield do not recommend much of any of the New Zealand plants for their region, *Coprosma*

Baueri freezes, *Cordyline australis* needs protection in the interior valleys, *Myoporum laetum* seems to grow. *Pittosporums* are poor but to my surprise *Vitex lucens* seems to succeed.

Mr. J. A. Gooch, of Armstrong Nursery, Ontario, Calif., makes the following recommendations: *Aleurites moluccana* doing well in Beverly Hills. *Coprosma Baueri* is used extensively in shade and close to the coast. *Cordyline australis* and *C. indivisa* are good generally but will not stand the desert. *Dodonaea* is good everywhere including desert and coast. *Pittosporum crassifolium* will not stand extreme heat, good on coast. *Pittosporum eugenioides* and *P. tenuifolium* are both good. *Alseuosmia macrophylla* is good in the shade. *Clanthus puniceus* is fair but burns in the sun. *Myrtus Ralpii* is fair. *Hebe Hectori* and *Hebe Hulkeana* are fair but all the varieties do best at the coast.

He says "the ones generally grown are best along the coast, many that will stand the heat will not stand the frost of the interior sections. Practically none of the New Zealand plants now in use are adapted to the desert or the mountain regions. On the other hand, there seem to be very few of the great number available that have been given a complete trial, and undoubtedly there are many more than are suited to California planting. This is further substantiated when you consider that *Dodonaea viscosa* grows fast and looks well on the Colorado Desert with a little care. There must be others from the same region that will do equally well."

Mr. Wm. Hertrich of the Huntington Botanic Garden, San Marino reports about 30 species and considering that he is located 20 miles inland these plants have done extremely well. He

has other small specimens on trial. His list is as follows: *Agathis australis*, *Alectryon excelsum*, *Coprosma Baueri*, *Cordyline australis*, *Corynocarpus laevigata*, *Dodonaea viscosa*, *Entelea arborescens*, *Griselinia littoralis*, *Leptospermum scoparium*, *Metrosideros robusta*, *Metrosideros villosa*, *Pittosporum crassifolium*, *Pittosporum eugenioides*, *Pittosporum tenuifolium*, *Rhopalostylis sapida*, *Carmichaelia odorata*, *Cassinia fulvida*, *Cassinia leptophylla*, *Cassinia Vauvilliersii*, *Coprosma Cunninghamii*, *Cordyline australis*, *Cordyline terminalis*, *Dodonaea viscosa*, *Entelea arborescens*, *Myoporum laetum*, *Myrtus obcordata*, *Hebe amabilis*, *Hebe elliptica*.

Mr. Frank A. Leach, Jr., Piedmont, California, replies as follows: "Two rather rare subjects *Corynocarpus laevigata* and *Myoporum laetum* are particularly suited to the coast cities and areas; but will not stand the rigors of the interior valleys. My *Myoporum laetum*, now 25 years old is 25 feet tall and a greater spread and its berries furnish feed for myriads of birds during the fall and winter. It is easily propagated by seed or cuttings. The *Corynocarpus laevigata* does well in Piedmont also and is a very ornamental shrub which should be widely used. Cuttings root readily."

Mr. J. H. Morley, Superintendent of Parks, San Diego gives me the following list: *Agathis australis*, *Alectryon excelsum*, *Aleurites moluccana*, *Coprosma Baueri*, *Cordyline australis*, *Corynocarpus laevigata*, *Dodonaea viscosa*, *Entelea arborescens*, *Metrosideros robusta*, *Metrosideros tomentosa*, *Myoporum laetum*, *Pittosporum crassifolium*, *Pittosporum eugenioides*, *Pittosporum tenuifolium*, *Sophora tetraptera*, *Phormium tenax*, *Phormium tenax variegata*, *Phormium Colensoi*, *Hebe buxifolia*, *Hebe elliptica*.

Miss K. O. Sessions of San Diego reports the following: *Coprosma Baueri*, *Corynocarpus laevigata*, *Dodonaea viscosa*, *Fuchsia excorticata* from seed, *Metrosideros robusta*, *Metrosideros tomentosa*, *Metrosideros villosa*, *Pittosporum crassifolium*, *Pittosporum eugenioides*, *Pittosporum tenuifolium*, *Pittosporum Ralphii*, *Hebe Andersonii*, *H. Balfouriana*, *H. Barkeri*, *H. Bollonsii*, *H. buxifolia*, *H. Buchanani*, *H. chathamica*, *H. Colensoi*, *H. cupressioides*, *H. Dieffenbachii*, *H. Dorrien-Smithii*, *H. diosmaefolia*, *H. Darwiniana*, *H. elliptica*, *H. gigantea*, *H. gracillima*, *H. Gibbsii*, *H. Hulkeana*, *H. Lewisii*, *H. leiophylla*, *H. laevis*, *H. macroura*, *H. macrocarpa*, *H. macrantha*, *H. obtusata*, *H. parviflora*, *H. pinguiifolia*, *H. pimeleoides*, *H. rotundata*, *H. rupicola*, *H. speciosa*, *H. salicifolia*, *H. Townsoni*, *H. Traversii*, *H. vernicosa*.

Mr. Victor Reiter, Jr., San Francisco. As he is within four blocks of Golden Gate Park his list might have included all of those in the park but Reiter's notes on culture might be helpful and I will include them. "The New Zealand alpine seed is very erratic and difficult to germinate and I have very little to show for my efforts."

PERENNIAL HERBS

Celmisia coriacea, *Celmisia spectabilis*, *Coprosma Petrii*, trailer, *Hebe Hectori*, an interesting whipcord plant, easy except mealy bug. *Myosotidium nobile* always dies here. *Nertera depressa*, two forms, one berries freely the other has not done so yet. *Ourisia caespitosa*, one year old creeping plant for cool moist acid culture. *Pratia angulata*, a vigorous trailer perpetually in flower, good. *Raoulia australis* a very exceptional silvery carpet, full

sun. *Rubus Barkeri*, this is a sterile hybrid trailer used on "dry" banks in New Zealand plantings; beautiful narrow serrated leaves marbled in bronze; one inch high, rooting as it creeps; the most stunning ground cover I have ever seen. *Veronica Bidwillii*, fine white flowers Arctostaphylos-like trailer, good. *Veronica Lyallii*, three forms but inferior to *V. Bidwillii*. *Veronica Olseni*, fine lilac flowers, a good trailer.

Miss Mabel Symmes, Berkeley, Calif., mentions 65 New Zealand plants as growing on Mrs. Anson Blakes place as follows: *Alectryon excelsum*, *Aristotelia racemosa*, *Cordyline indivisa*, *Corynocarpus laevigata*, *Fuchsia excorticata*, *Gaya Lyallii*, *Hoheria angustifolia*, *Hoheria sexstylosa*, *Leptospermum scoparium*, *Metrosideros lucida*, *Metrosideros tomentosa*, *Nothofagus*, *Olearia Traversii*, *Pittosporum crassifolium*, *Pittosporum eugenioides*, *Pittosporum tenuifolium*, *Podocarpus acutifolius*, *Podocarpus spicatus*, *Podocarpus totora*, *Pseudopanax crassifolium*, *Senecio compactus*, *Sophora tetraptera*, *Suttonia salicina*, *Aristotelia racemosa*, *Brachyglottis repanda*, *Carmichaelia Williamsii*, *Coprosma areolata*, *Coprosma Baueri*, *Cordyline australis*, *Fuchsia procumbens*, *Helichrysum glomeratum*, *Hymenanthera chathamica*, *Leptospermum scoparium*, *Melicope ternata*, *Myoporum laetum*, *Myrtus bullata*, *Myrtus obcordata*, *Myrtus Ralphii*, *Olearia avicenniaefolia*, *Olearia Haastii*, *Olearia macrodonta*, *Pimelea buxifolia*, *Pittosporum crassifolium*, *Podocarpus acutifolius*, *Rubus Schmidlioi*, *Senecio compactus*, *Hebe Andersonii*, *Hebe buxifolia*, *Hebe chathamica*, *Hebe cupressoides*, *Hebe gigantea*, *Hebe imperialis*, *Hebe salicifolia*.

Under the perennial herbs she gives

the following—all doing well: *Arthropodium cirrhatum*, *Epilobium*, *Hypoxis pusilla*, *bulbosa*, *Geranium Traversii*, *Libertia grandiflora*, *Linum monogynum*, *Myosotidium nobile* the New Zealand Forget-me-not, *Nertera depressa*, *Raoulia* and *Veronica cataractae*.

Director T. Wayland Vaughan, Scripps Institute of Oceanography of the University of California at La Jolla, California, reports as follows: *Coprosma Baueri*, *Corynocarpus laevigata*, will not burn at all but will not stand any frost, *Myoporum laetum*, *Pittosporum crassifolium* good, *Pittosporum tenuifolium* burns. Of the Hebes many species stand the salt sea spray in La Jolla.

Mr. James West, San Rafael, reports for Marin County partial list of species from New Zealand in cultivation in Marion County, California. General remarks:

"Most of the New Zealand plants grown in this region are fully as successful here as they are in other parts of northern California. Among the exotics they may as a class be pronounced as being next to the plants from the Mediterranean Region in adaptability and probably ahead of those from Chile, Australia and South Africa. In cases of non-success the trouble seems to be rather summer drought than winter cold, at least as far as the coastal belt is concerned. Inland the minimum temperatures are likely to drop below the limit of tolerance for some species. Many New Zealand plants do particularly well in the localities of this country with equable and rather moist climate, such as Sausalito, Belvedere, Bolinas and Inverness. Some species are easy to grow while others are decidedly difficult for reasons not always clear. Among these are *Hebe Hectori*, a dis-

tinct and beautiful species of the scaly-leaved type which has a tendency to die out after a few years. *Nertera depressa* which refuses to berry as profusely here as farther north on the Pacific Coast and most of the species of *Celmisia* so far tried. In general apparently a rather large proportion of New Zealand plants are exceptionally slow and difficult to germinate, particularly among the alpenes, both shrubby and perennial.

TREES

Aristotelia racemosa. A recent introduction, a good small tree or shrub.
Coprosma Baueri. Not usually arborescent here. A standard material in the milder districts. Tender away from the coast.
Cordyline australis. Standard material. Completely hardy.
Elacocarpus. Plants still under lath.
Fuchsia excorticata. Succeeds well in mild districts.
Hoheria populnea. Very promising. Hardy.
Hoheria populnea Osbornei. Very recent introduction, beautiful and promising.
Hoheria sexstylosa. A few plants experimental.
Metrosideros robusta. Grown somewhat. Probably hardy.
Metrosideros tomentosa. Grown somewhat. Probably hardy.
Myoporum laetum. Rare. Successful near coast.
Nothofagus fusca. Beautiful and promising.
Olearia Traversii. Good and hardy.
Pittosporum crassifolium, *Pittosporum eugenoides*, *Pittosporum tenuifolium*. All three usually used as hedge plants or shrubs rather than trees.
Podocarpus totara. Successful where tried.
Sophora tetraptera. Successful where tried.

SHRUBS

Carmichaelia Monroi. Died as seedlings.
Carmichaelia odorata. Quite successful.
Carmichaelia Petriei. Promising.
Cassinia Vauvilliersii. Rare but very useful and hardy small shrub.
Chordospartium Stevensonii. Experimental but promising well.
Clanthus puniceus. Beautiful and good near coast. Not very hardy inland. Tends to become straggly in age. A white form is rarely grown.
Corokia cotoneaster. Seems successful.
Entelea arborescens. Probably a few in experimentation.
Fuchsia procumbens. Good. Used as shady ground cover, on dry walls and as a porch plant. Fine berry effect.
Gaultheria antipoda. Seed did not germinate. It is worth introducing as a rock garden plant.
Griselinia littoralis, lucida. Both shrubby rather than arborescent here. Hardy. Fine clean foliage, free from pests.
Hebe. These are generally successful in Marin County as Mr. West gives the names of 19 species tried out there. These are *Hebe Andersonii*, *H. buxifolia*, *H. chathamica*, *H. diosmaefolia*, *H. gigantea*, *H. Hulseana*, *H. pimeleoides*, *H. pinguiifolia*, *H. salicifolia*, *H. Traversii*, *H. carnea*, *H. decumbens* and *H. Hectori*.
Hymenanthera chathamica. Quite rare in cultivation but successful.
Leucopogon Fraseri. Slow to take hold but a beautiful ground cover for rock gardens.
Melicope ternata. Rarely grown. Did not survive the 1932 freeze.
Myrtus bullata. Beautiful and promising.

Myrtus Ralphii. Beautiful and promising.

Nothospartium Carmichaeliae. Seedlings died.

Olearia macrodonta. Fine and successful so far.

Olearia nummularia. Beautiful and worth trying.

Olearia oleifolia. Good where tried.

Olearia paniculata. Survived heavy frost with little damage. Interesting foliage.

Olearia semidentata. Good where tried.

Several others were tried. All good and promising. The desirable colored hybrids should be introduced.

Podocarpus nivalis. Failed from seed, but well worth trying again. Fine dwarf conifer for rock garden.

Senecio Greyii. Rather common. Quite easy.

Senecio claeagnifolius. New and rare.

Veronica Bidwillii, *V. catarractae*, *V.*

Lyallii and *V. Olseni*.

Major N. F. Vanderbilt, Ignacio, Calif., writes, "I have *Aciphylla cirrhatum*, extremely vigorous and showy but not yet flowered. It provides admirable foliage effect in any case. Astonishing multiplication in one year. Open sun, sand-silt soil.

Interview with P. Riedel, Santa Barbara, Calif. The following New Zealand plants growing in Santa Barbara:

Alectryon excelsum, New Zealand

Ash. This is pre-Franciscan period.

Mr. Sexton had it. It should be grown more in Santa Barbara. It has no insect enemies, is abundantly evergreen and can be grown to natural size without outgrowing its place.

Aleurites moluccana, does well here. The fruit reseeds itself. It is useful as a dark foliage behind it makes this plant appear white.

Aristotelia racemosa, growing here and has promise.

Corynocarpus laevigata is best used under a tree as an undershrub, as the leaves burn in the sun.

Cordylina australis grown well here but is out of fashion.

Entelea arborescens. Cut it back every year and you get larger leaves and a new crop of flowers.

Griselinia lucida has beautiful leaves quite as good as *Coprosma*.

Griselinia littoralis also does well.

Leptospermum ericoides is grown here.

Metrosideros robusta is here.

Metrosideros tomentosa is also here.

Myoporum laetum is excellent.

Olearias. The ones we have here do very well. The flowers do not last. *Olearias* are used here for their form and not their flowers.

Rhopalostylis sapida, Nikau Palm.

We are neglecting our palms. I have seen this one growing for 30 years under an oak tree. Some of its leaves were fifteen feet long.

Clianthus puniceus, Parrot's Bill. These are not happy here. They last for a year or two and then die.

Coprosma Baueri, Coral Coprosma, does well and is especially good for the sea-coast. Both of the variegated *Coprosma Baueri* are slower and grow only from cuttings, the white variegated one being the slowest of the three.

PERENNIAL HERBS

Arthropodium cirrhatum. It is splendid and does well with our other perennials.

Libertia grandiflora does well here.

Myosotidium nobile, New Zealand Forget-me-not is splendid.

Nertera depressa, Oblate-leaved Nertera. It will die even if it is in the hot sun for only two hours. Grow it in the shade.

I regret not having been able to interview Mr. Eric Walther, who is under Mr. John McLaren, able Superintendent of Golden Gate Park, and is responsible for the choice of most of the New Zealand plants that have lately been introduced into this park. He was in Mexico at the time I was compiling my list from my numerous old field notebooks and could undoubtedly have added many other names to those I have already given. We shall hope later to hear from him in our final report as well as from several Santa Barbara people who disappointed me at the last minute.

CONCLUSIONS

From a preliminary study of these reports it would seem that general opinions are as follows:

1. Most of the New Zealand plants tried are adapted to the coast regions but not to the hot interior valleys.

2. New Zealand seeds must be planted immediately after they are ripe but by the time they reach us they are not viable and the results is discouraging. Take the case of *hoheria* here in Berkeley. The plants seed freely and soon cover the ground under the trees with vigorous young plants. These are transplanted to pots or set out in the open ground where required.

3. In case of perennial herbs and sub-alpine shrubs they have been found very hard to germinate, whether fresh or old. However those people who grow rock plants for the sake of conquering the technique of growing them can find ample opportunity in these extremely difficult subjects, but when they have once succeeded they can give us "the most beautiful alpine plants in the world," which is rewarded enough for any such gardener. We have four or five such men already in the Cali-

fornia Horticultural Society and we are expecting others from Oregon and the eastern states to help lead the way.

4. We are happy to learn that many, many of the New Zealand plants are quite easily grown from cuttings which makes it possible eventually to stock up the whole state from those plants already growing there. There must be many an old specimen tree about the Bay Region since Mr. H. M. Butterfield, who has been looking up early introductions into California, tells me that the First Annual flower show of the Bay District Horticultural Society held August 1871 contained, among other entries the names of six New Zealand plants on exhibition, viz:

Cordyline australis.

Cordyline terminalis var. *Cooperi*.

Cordyline terminalis var. *ferrea*.

Clianthus puniceus.

Pittosporum tenuifolium under the name of *P. nigram*.

Podocarpus totara.

That was 60 years ago and all of these varieties are still common about the Bay Region with the possible exception of the two varieties of *C. terminalis*. It was also found that a Mr. Stephen Nolan, a nurseryman in Oakland from 1860 to 1877, introduced a great many ornamental plants into California. Nor was he the only one, for Mr. W. C. Walker, proprietor of Golden Gate Nursery in San Francisco, sold plants as early as 1857 in that city and on the Peninsula, and the fact that New Zealand plants of the same species are still common about here would indicate that they are suited to our climate. They are so quiet in color in general that their presence would hardly be suspected, especially as they had to compete with the more brilliant plants of Australia, Mexico and Europe.

The New Zealand shrubs are more

rare here, due, doubtless, to the difficulty of germinating them as most of them are from the alpine and subalpine regions of New Zealand and so far do not seem to be long-lived with us. The *Olearias* are very handsome as seen in their sub-alpine meadows in the clear air, blue sky with white clouds and their far views make a scene of rare beauty. Their *Hebes* we now have with us in great numbers but not many of the hybrids whose color and beauty cannot be duplicated in the wild as many of them have never been seen excepting in home gardens. Here in California the *Hebes* are short-lived and some are undoubtedly weedy looking though they are often used in parks be-

cause they are easily replaced if they are destroyed by the public. They are very attractive, however, in sandy soil as at Golden Gate Park.

Our hope then points to the perennial herbs for rock gardens and herbaceous borders. Some of these have already been for years, such as *Libertia grandiflora*, and are very satisfactory as they bloom for a long period and are neat and attractive. *Celsias* we hope to grow and the *Arthropodium cirrhatum* has already been conquered. We therefore have hopes that by patient plodding and a never give up spirit to yet conquer those New Zealand alpenes.

The Second Gentleman Farmer

BY MILDRED DEAN

It is the second gentleman farmer of literature who has set the standard for his ilk for all time. The earliest claimant to the title, Cato the Elder, lacked so many points of being a gentleman, that some have denied him the name altogether. But in Horace's poetry the world has seen mirrored for all generations the man of the world, the realist as we like to call him today, measuring life, packing his philosophy into unforgettable epigrams, and choosing the country life as the highest good.

Yet the phrase "man of the world" does not describe him so accurately as gentleman farmer, for though he had the entrée into the great world of his day, and was sought after and flattered for his influence, he preferred and clung to the quiet life of his farm, where he could read, meditate and write uninterrupted. What claim has Horace upon the attention of the busy horticulturist of today, who brings his materials from the ends of the earth and makes the sciences grant their secrets to guarantee his success. Horace loved one little farm at the side of one narrow valley, two thousand years ago. The fruits and harvests of that land, abundant though they were, comprised all his world of plants. The difficulties and losses of any farmer of that day brought their defeats to assail his spirit. The incidents of a simple country life, where peaceful toil filled the days of all around him, supplied the humor and the drama that light his pages. But out of these materials his genius wove the verses that speak even today to the lover of the soil, of the joys of garden, grove and pasture, and to the free spirit, knowing the

world, smiling at it, and going his own way tranquilly.

He was born in 65 B. C. in Venusia, a village of southern Italy. His father, though only a freedman, must have been able and intelligent, for he moved to Rome to educate his son whose talent he early recognized. At nineteen the poet went to Athens to study philosophy and poetry. In the midst of his studies he was swept into the vortex of the civil wars by the persuasions of a friend. He fought and suffered through the disastrous campaign of Brutus, and after the final defeat, reached Rome penniless, half sick and friendless. He was lucky enough to secure a small clerkship in the treasury and found leisure to write some poetry and to become friendly with some poets. Through these new friends he met Maecenas, the wealthy patron of the arts, from whom he received the gift of the farm where he spent the remainder of his life.

Let us hear a kindred spirit speak for himself from the distance of two millennia.

(1) Happy the man who, far away from business cares, like the pristine race of mortals, works his ancestral acres with his steers; who is not as a soldier, roused by the wild clarion, nor dreads the angry sea; he avoids the Forum and proud thresholds of more powerful citizens; and so he either weds his lofty poplar trees to well-grown vines, or in secluded dale looks out upon the ranging herds of lowing cattle, and, cutting off useless branches with the pruning knife, engrafts more fruitful ones, or stores away pressed honey in clean jars,

or shears the helpless sheep. Or when Autumn in the fields has reared his head crowned with ripened fruits, how he delights to pluck the grafted pears, and grapes that with the purple vie, with which to honor thee, Priapus, and thee Father Silvanus, guardian of boundaries.

'Tis pleasant now to lie beneath some ancient ilex tree, now on the matted turf. . . . Meanwhile the rills glide between their high banks; birds warble in the woods; the fountains splash with their flowing waters, a sound to invite soft slumbers. But when the wintry season of thundering Jove brings rains and snow, with his pack of hounds one either drives fierce boars from here and there into the waiting toils, or on polished pole stretches wide meshed nets, a snare for the greedy thrushes, and catches with the noose the timid hare and the crane that comes from far—sweet prizes!

But if a modest wife shall do her part in tending home and children dear, like to some Sabine women or the well tanned mate of sturdy Apulian, piling high the sacred hearth with seasoned firewood against the coming of her weary husband, penning the frisking flock in wattled fold, draining their swelling udders, and, drawing forth this year's sweet vintage from the jar, prepare an unbought meal,—then not Lucrine oysters would please me more, nor scar, nor turbot, should winter thundering on the eastern waves, turn them to our coasts; not Afric fowl nor Ionian pheasant would make for me a repast more savory than olives gathered from the richest branches of the trees, or the plant of the meadow-loving sorrel, and mallows wholesome to the ailing body, or a lamb slain at the feast of Terminus

or a kid rescued from the wolf. Amid such feasts, what joy to see the sheep hurrying homeward from pasture, to see the wearied oxen dragging along the upturned ploughshare on their tired necks, and the home-bred slaves, troop of a wealthy house, ranged around the gleaming statues of the household gods.

(2) That corner of the world smiles for me beyond all others, where the honey yields not to Hymentus, and the olive vies with Venafrum, where Jupiter vouchsafes long springs and winters mild. . . . That place and its blessed heights summon thee and me.

(3) The snow has fled; already the grass is returning to the fields and the foliage to the trees. Earth is going through her changes, and with lessening flood the rivers flow past their banks. . . . The cold gives way before the zephyrs; spring is trampled underfoot by summer, destined likewise to pass away so soon as fruitful autumn has poured forth its harvest; and lifeless winter soon returns again.

(4) Keen winter is breaking up at the welcome change to spring and the zephyr, and the tackles are hauling dry hulls toward the beach. No longer now does the flock delight in the fold, or the plowman in his fireside, nor are the meadows longer white with hoary frost. . . .

(5) Already the Thracian breezes, spring's attendants that calm the sea, are swelling the sails of ships; no longer are the meadows frozen, nor do the rivers roar, swollen with winter's snow. Making tearful moan . . . the ill-fated swallow builds her nest. On the soft grass the keepers of the fat sheep play songs upon the pipe, and delight the god to whom are dear Arcadia's flocks and somber hills.

But sometimes all is not well, even in the country.

(6) If he ask you how I fare, tell him that despite many fine promises I live a life neither wise nor pleasant; not because hail has beaten down my vines and heat blighted my olives, nor because my herds are sickening on distant pastures; but because less sound in mind than in all my body, I will listen to nothing, will learn nothing to relieve my sickness; quarrel with my faithful physicians, and angrily ask my friends why they are eager to rescue me from fatal lethargy. . .

(7) And you—whatever hour God has given for your weal, take it with grateful hand, nor put off joys from year to year; so that in whatever place you have been, you may say that you have lived happily. For if 'tis reason and wisdom that take away cares, and not a site commanding a wide expanse of sea, they change their clime and not their mind, who rush across the sea. 'Tis a busy idleness that is our bane; with yachts and cars we seek to make life happy. What you are seeking is here, it is in a stupid little village noisy with the croaking of frogs, if there fail you not a mind well balanced.

(8) Lest you should have to ask me about my farm, whether it supports its master with plowland or makes him rich with olives or apples or meadows or vine-clad elms, I will describe for you in rambling style the nature and lie of the land. There are hills quite unbroken, were they not cleft by one shady valley, yet such that the rising sun looks on its right side, and when departing in his flying car warms the left. The climate would win your praise. What if you knew that the bushes bear a rich crop of ruddy cornels

and plums, that oak and ilex gladden the cattle with plenteous fruitage and their lord with plenteous shade? . . . A spring too, fit to give its name to a river, so that not cooler nor purer is Hebrus winding through Thrace, flows with healing for sickly heads and sickly stomachs. This retreat, so sweet—yes, believe me, so bewitching—keeps me, my friend, in sound health in September's heat. . . And you—you live the true life, if you take care to be what people call you. . .

(9) This is what I prayed for!—a piece of land not so very large, where there would be a garden, and near the house a spring of ever-flowing water, and up above these a bit of woodland. More and better than this have the gods done for me. I am content. Nothing more do I ask, O Mercury, save that thou make these blessings last my life long. If I have neither made my substance larger by evil ways, nor mean to make it smaller by excesses or neglect. . .

He tells here some of the disagreeable things that happen to him while he is in Rome.

Amid such exasperations, alas, I waste my day, praying the while, "O rural home when shall I behold you? When shall I be able, now with books of the ancients, now with sleep and idle hours, to quaff sweet forgetfulness of life's cares? O when shall beans be served me and with them greens well larded with fat bacon?" O nights and feasts divine! When before my own Lar we dine, my friends and I . . . and so begins a chat, not about other men's homes and estates, nor whether Lepos dances well or ill; but we discuss matters which concern us more, and of which it is harmful to

be in ignorance—whether wealth or virtue makes men happy, whether self-interest or uprightness leads us to friendship, what is the nature of good and what its highest form.

(10) Who then is free? The wise man, who is lord over himself, whom neither poverty nor death nor bonds affright, who bravely defies his passions, and scorns ambition, who in himself is a whole, smoothed and rounded, so that nothing from outside can rest on the polished surface, and against whom Fortune in her onset is ever maimed.

He considers even the spring on his farm worthy of a poem in its honor.

(11) O fount Bandusia, brighter than crystal, worthy of sweet wine and flowers, tomorrow shalt thou be honored with a firstling of the flock whose brow with horns just budding, foretokens love and strife. Alas! in vain; for this offspring of the sportive flock shall dye thy cool waters with his own red blood. Thee the fierce season of the blazing dog-star cannot touch; to bullocks wearied of the ploughshare and to the roaming flock thou dost offer gracious coolness. Thou, too, shalt be numbered among the far-famed fountains, through the song I sing of the oak planted o'er the grotto whence thy babbling waters leap.

(12) My stream of pure water, my woodland of a few acres, and sure trust in my crop of corn bring me more blessing than the lot of the dazzling lord of Africa, though he know it not. Though neither Calabrian bees bring me honey, nor wine lies mellowing for me in Laestrygonian jars, nor thick fleeces are waxing for me in Gallic pastures, yet distressing poverty is ab-

sent; nor, did I wish more, wouldst thou refuse to grant it. By narrowing my desires I shall better enlarge my scanty revenues. . . . To those who seek for much, much ever is lacking; blest is he to whom the god with chary hand has given just enough.

It is too one sided a picture of Horace, however, that shows only his praise of the country and the simple life. He held up for scorn the greed of his day, the passion for publicity, the selfish pleasure-loving life of the city, the brazen habit of legacy hunting and the fawning mob that follows the rich. Nor does he spare the personal vices which we see in every age, miserliness, gluttony, licentiousness, but attacks them with ridicule that is without bitterness but leaves a barbed phrase behind.

Some of his famous epigrams pack wisdom into a few words and are well worth remembering. "Nil admirari" is one of these.

(13) "Marvel at nothing"—that is perhaps the one and only thing, Numicius, that can make a man happy and keep him so. Yon sun, the stars and seasons that pass in fixed courses—some can gaze on these with no strain of fear: what think you of the gifts of earth, or what of the sea's, which makes rich far distant Arabs and Indians—what of the shows, the plaudits and the favors of the friendly Roman—in what wise, with what feelings and eyes think you they should be viewed? . . . Go now, gaze with rapture on silver plate, antique marble, bronzes and works of art; "marvel" at gems and Tyrian dyes; rejoice that a thousand eyes survey you as you speak; in your diligence get you to the Forum early, to your home late, lest Mutus reap more grain from the lands of his

wife's dower, and (oh the shame, for he sprang from meaner stock) lest you "marvel" at him rather than he at you. Time will bring in to the light whatever is under the earth; it will bury deep and hide what now shines bright. When Agrippa's colonnade, when Appius's way has looked upon your well-known form, still it remains for you to go where Numa and Ancus have gone down before.

Another notable phrase is "aurea mediocritas," the golden mean, not too much of anything. "Quid leges sine moribus?", (what are laws without character) is an admonition we should have done well to remember when we were trying to make the world temperate by constitutional amendment. His advice to poets and writers is still without rival. The gay phrase, "purple patches sewed on so as to glitter far and wide" has equipped many a critic to subdue a young author whose ambitions are soaring too high for good taste.

The poet wrote of himself in one of his odes, "Exegi monumentum aere perennius," "I have built a monument more lasting than brass." This it is surely to be quoted after two thousand years, and to furnish a mold for life for people in another hemisphere, of an alien race and of a different tongue.

Since the year 1935 is the bi-millennium of the poet's birth, the American Classical League summons all his friends and admirers to join in celebrating the anniversary. Among the first whom we call upon to pay to him the tribute of their attentive interest, are the horticulturists whose sane and happy life he praised.

(1) Epode II; the translation is by C. E. Bennett, in the Loeb Classical Library.

(2) Odes II, VI 13-24.

(3) Odes IV, VII 1-13.

(4) Odes I, IV 1.

(5) Odes IV, XII 1-5, 9-12.

(6) Epistle VIII, 3-8.

(7) Epistles I, XI 22-30.

(8) Epistles I, XVI 1-16.

(9) Satires II, VI 1-7, 59-76, 79 117

(10) Satires II, VII 83-87.

(11) Odes III, XIII 1-16.

(12) Odes III, XVI 29-44.

(13) Epistles VI 1-8, 17-27.

The Large-Flowered Clematis Hybrids

A Tentative Check-List

By J. E. SPINGARN

I. THE HYBRIDS IN EUROPE

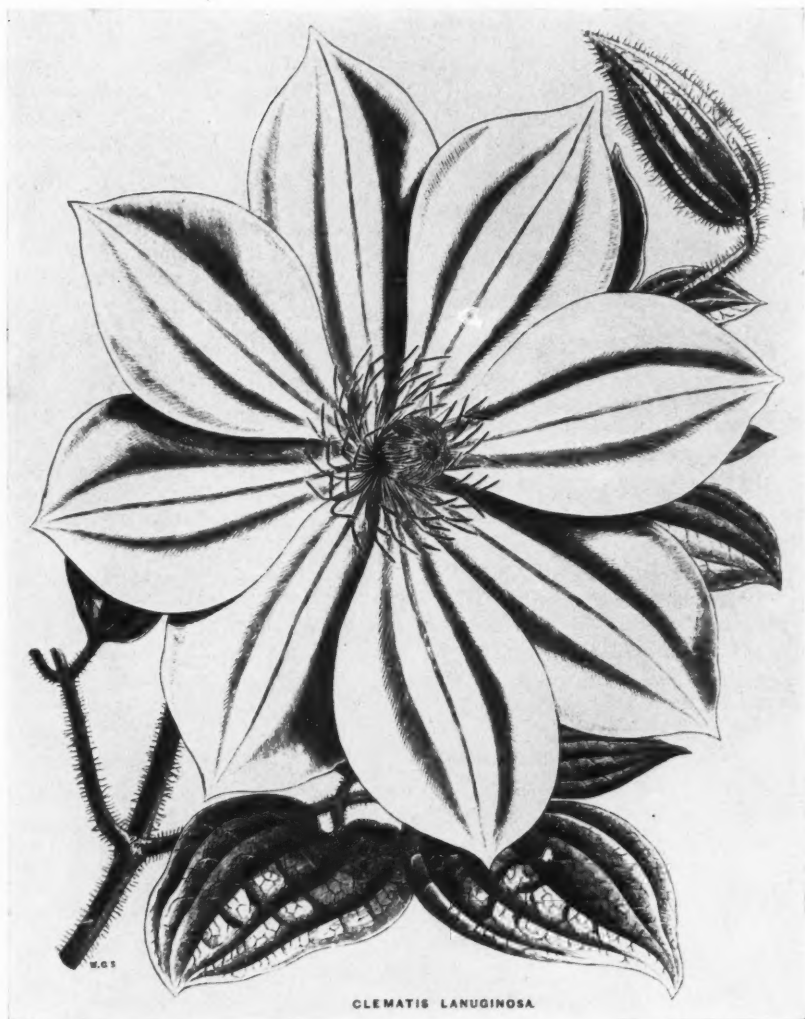
The prestige of the genus *Clematis* in the gardens of Europe was radically changed when Robert Fortune found *C. lanuginosa* near Ningpo, China, and introduced it to cultivation in 1850. This charming species, with large pale lavender flowers four to eight inches across, became the parent of many of our loveliest hybrids, but few of them surpass it in beauty, and it continues to vie with them in gardens and nursery catalogues to this day.

Before this two other Asiatic species with large flowers had reached Europe, both of them also destined to become the parents of many hybrids. *C. florida*, a Chinese species but long in cultivation in Japan, with creamy white flowers measuring from two to three and a half inches across, had been discovered in Japan by Thunberg and introduced as early as 1776; and a Japanese species, *C. patens*, with white to violet or violet-blue flowers four to six inches across, had been found by Siebold in a garden near Yokohama and introduced in 1836. In the following year Siebold introduced a variety of *C. florida* which was at first given specific rank as *C. Sieboldii*, and is also known as *C. florida bicolor* because of its creamy white sepals and centre of purple petal-like stamnodes.

There was also available to the hybridist a species native to the South of Europe, *C. Viticella*, which had been introduced to cultivation as early as 1597, but whose purple, rosy purple,

or violet flowers, measuring only one to two inches across, were smaller than those of the recent immigrants from Eastern Asia. This species was probably one of the parents of the first hybrid raised in Europe, *C. Hendersonii*, which an English nurseryman named Henderson raised by crossing, it is believed, *C. Viticella* with another European species, *C. integrifolia*; and although this hybrid, which still survives under its own or under other names, such as *C. eriostemon* and *C. Bergeronii*, was in no sense large-flowered, it ultimately became a parent of one of the most famous of all large-flowered hybrids. *C. Viticella* was often used in hybridizing thereafter; the large-flowered hybrids of this type have flowers that are distinctly flat or open, but the small- and medium-flowered hybrids sometimes revert to the somewhat less open form of the species itself.

But the appearance of *C. lanuginosa* offered a new opportunity to the hybridists, and the introduction of two varieties of *C. patens* (*Fortunei*, with double creamy white flowers changing to pink, and *Standishii*, with light lilac-blue flowers of metallic lustre) and of various Japanese hybrids (such as *Amalia*, *Helena*, *Louisa*, *monstrosa*, and *Sophia*) added to their good fortune in the next few years. Those who are curious to see what the early importations from Japan and China looked like will find colored illustrations of most of them in the old Belgian periodical, *Flore des Serres*. It was by a com-



Clematis lanuginosa, a Chinese species from which the hybrids of the *Lanuginosa* Type and many others have been derived

bination of all these species and varieties that the various hybrids were produced, but the blood of *C. lanuginosa* and to a less extent of *C. patens*

was the dominating element. The three large-flowered Asiatic species can easily be distinguished from one another. If the flower-stalks have two

leaf-like bracts near the middle, the species is *C. florida*, for the flower-stalks of *C. patens* and *C. lanuginosa* have no bracts at all; and in *C. lanuginosa* the leaves are often simple (sometimes ternate) and the sepals overlapping, whereas in *C. patens* the leaves are never simple but three or five foliate and the sepals set apart. Moreover, *C. florida* and *C. patens* flower on old wood, while *C. lanuginosa* flowers on new summer shoots. Nearly all of the double-flowered hybrids have been derived from *C. florida* and *C. patens*.

The first of the large-flowered hybrids may be said to have been created in 1855-56 by Anderson-Henry of Edinburgh, whose *C. reginae* resulted from a cross between *C. lanuginosa* and *C. patens*. This was exhibited in 1862; and for the next fifteen or more years there was an extraordinary outburst of creative energy in the horticultural world, and hybridists everywhere in Europe were busy developing new varieties. The appearance of *C. Jackmani*, which was first exhibited by George Jackman & Son at Kensington in 1863, took the public by storm, and for the time made Clematis the most popular of flowers. This variety, raised in 1858 and first flowering in 1862, was the result of a cross between *C. lanuginosa* and two forms of *C. Viticella*, namely, *C. Hendersonii* and *C. Viticella atrorubens*. The hybrid thus produced has all the characteristics of an established type, so much so that one is almost persuaded to accept the opinion of Lavallée and others who regard it, not as a hybrid at all, but as identical with a dubious Japanese species, *C. hakonensis*.

From now on many new varieties were created by Messrs. Jackman,

Charles Noble, and Cripps & Son in England, Simon-Louis Frères in Metz, Victor Lemoine in Nancy, and many others. Later other continental firms and individuals, such as Christen, Baron-Veillard, Morel, and Moser in France, Froebel in Switzerland, and Späth in Germany, added still other varieties. Lists of names make dull reading, but it is astonishing to recall that such well-known varieties as Al-exandra, Countess of Lovelace, Fair Rosamond, Gem, Gloire de St. Julien, Henryi, Jackmani, Lady Caroline Neville, Lady Londesborough, Lucie Lemoine, Madame Van Houtte, Miss Bateman, Otto Froebel, Star of India, The Queen, and velutina purpurea were all produced within ten years, and all of them before 1872. During the 'seventies and 'eighties some equally interesting hybrids were produced, including Ascotiensis, Beauty of Worcester, Belle of Woking, Blue Gem, Fairy Queen, Gipsy Queen, Grand Duchess, La France, lilacina floribunda, Lord Neville, Mrs. Cholmondeley, Mrs. Hope, Madame Baron-Veillard, Perle d'Azur, Proteus, purpurea elegans, Sir Garnet Wolseley, The President, and Venus Victrix. Here is a significant fact: of the 94 varieties listed in the 1933 catalogue of an English nursery, L. R. Russell, Ltd., 52 varieties had been introduced into cultivation in the fourteen years between 1863 and 1877.

But after the first outburst, which may be said to have lasted until the end of the 'seventies, the creative energy of hybridists began to languish somewhat until Messrs. Jackman produced Countess of Onslow in 1894. New blood was needed, and this was found in the American species, *C. texensis* (syn. *C. coccinea*), a charming climber with scarlet to rose-pink



Clematis patens, a Japanese species from which hybrids of the Patens Type and others have been derived

urn-shaped flowers, which was discovered in Texas in 1850 and introduced to English gardens about 1868. Countess of Onslow was a cross between *C. texensis* and Star of India. Shortly after it appeared Messrs. Jackman produced five new *texensis* hybrids, Duchess of Albany, Duchess of York, Grace Darling, Sir Trevor Lawrence, and Admiration. These six varieties they called the Workingensis Type, and Schneider has grouped them together under the name of *C. pseudococcinea*; but I shall refer to them hereafter by what seems to me the more appropriate title of Texensis Type. They can easily be distinguished from the other large-flowered hybrids by the fact that their flowers are not open or flat, but bell-shaped or trumpet-shaped. Leichtlin in Germany and André and Morel in France also produced several *texensis* hybrids, but the varieties they created seem to have disappeared from cultivation. In addition to these, several varieties were produced by crossing *C. texensis* with other American species, such as *C. crispa* and *C. Pitcheri*; Otto Froebel of Zurich produced at least fifteen such hybrids; but none of them can properly be called large-flowered.

Since the early 1890's many new large-flowered hybrids have appeared from time to time, including such fine varieties as Elsa Späth (introduced in 1891), Madame Edouard André (1892), Marcel Moser (1896), Nelly Moser (1897), Ville de Lyon (exhibited at Tours in 1899, introduced 1900), Lasurstern (1906), Lady Betty Balfour (1913), and finally Crimson King (1916). But the glorious days of the 'sixties and 'seventies have not returned, and will not return, perhaps, until new Clematis

blood is discovered, or until some of the mysterious diseases that affect the hybrids have been eliminated or at least controlled.

II. THE HYBRIDS IN THE UNITED STATES

What did America contribute to this galaxy? If we were discussing the small-flowered species, we should have to pay tribute to the Arnold Arboretum for introducing new species from China and elsewhere, but this achievement has no counterpart in the field of hybridization. The contribution of the United States, so far as Clematis hybrids are concerned, has been negligible. Luther Burbank raised a number of hybrids, single and double, including Snowdrift, Ostrich Plume, and Waverly, as well as some unnamed *texensis* hybrids which were distributed by J. C. Vaughan of Chicago in 1903-5, but all of these seem to have disappeared from cultivation and have left no trace; those who are interested in Burbank's work with Clematis will find brief accounts in the *London Garden* in 1896 and in the tenth volume of a huge windy work on Luther Burbank: *His Methods and Discoveries* (New York, 1915). A seedling of John Gould Veitch has been distributed by a Seattle nursery under the name of Mrs. Charles Malmo.

Finally, there is the very attractive variety, Ramona, which has often been thought of as an American creation. It is virtually unknown in England, and the few French nurseries that now offer it for sale seem to have obtained their original stock in the United States; indeed, in some of Lemoine's old catalogues, from 1890

onward, it is definitely ascribed to the Storrs & Harrison Company of Painesville, Ohio. It seems to have been first described and illustrated in the *Horticultural Art Journal*, of Rochester, New York, in 1888, where it is called "an American production" raised by Jackson & Perkins, of Newark, New York, and is said to be a seedling of one of Lemoine's hybrids, *C. lanuginosa candida*. The Storrs & Harrison's 1889 catalogue says: "This new Clematis originated at Newark, New York;" and the 1893 catalogue of the Jackson & Perkins Company, the earliest I have been able to find, states categorically: "We are the originators of the well-known Clematis Ramona." But the evidence would seem to indicate that this variety, so admirably suited to our soil and climate, is not an American creation; and the Jackson & Perkins Company has recently explained to me that "it came to us without a name, and we (in the absence of any name) named it Ramona."

At least as early as 1893 Ramona was regarded as a synonym of a Dutch variety, *Hybrida Sieboldii*, for in that year J. C. Vaughan of Chicago listed in his catalogue "Sieboldi (Ramona or Boskoop Seedling), an extra fine variety of the patens type; flowers very large, of a beautiful lavender shade." *Hybrida Sieboldii* was raised by B. Droog, a nurseryman of Boskoop, Holland, in 1874, by crossing *C. lanuginosa* and *C. patens*; it was first described in a Dutch periodical, *Sieboldia*, in 1875, and a rather pallid colored illustration of it appeared in another Dutch publication, *Nederlandsche Flora en Pomona*, in 1878. It is still grown under its original name in Holland, where it is generally regard-

ed as identical with Ramona. It was soon imported into the United States, and as early as 1885 Peter Henderson & Co. of New York listed "Hybrida Sieboldia (Boskeep Seedling), lavender." It is probably this variety, or possibly some other foreign hybrid, which the Jackson & Perkins Company, adopting the title of a popular American novel published in 1884, renamed Ramona and distributed about 1888. The new name soon superseded the older one, although Bobbink & Atkins continued to list "Sieboldi" or "Hybrida Sieboldi" until at least 1916. It should not, however, be confused with the true *Sieboldii*, which is a white and purple bicolor variety of *C. florida*, whereas the new Dutch hybrid has been variously described in Dutch, German, and American nursery catalogues as lavender, lavender-blue, silvery-lavender, blue, velvety clear blue, and deep sky-blue, all of which more or less accurately describe the rather variable forms of Ramona as well.

But though Americans have not as yet created a single outstanding hybrid, they very early took an interest in the new large-flowered species and hybrids imported from Asia or created in Europe. As early as 1838 *C. florida* was exhibited at the Massachusetts Horticultural Society by the Winship Nursery, and in the same year *C. florida Sieboldii* flowered at John Lowell's place in Roxbury, Massachusetts, though it was first publicly exhibited by Robert Buist of Philadelphia at the Pennsylvania Horticultural Society in 1840. A year later, in 1841, Marshall P. Wilder, president of the Massachusetts Horticultural Society, exhibited *C. patens* in Boston, and it was wel-

comed by Hovey's *Magazine of Horticulture* as "a new and fine kind."

A new period may be said to have begun in 1856 when E. S. Rand, Jr., exhibited *C. lanuginosa* in Boston, and W. C. Strong *C. lanuginosa pallida*, the former very justly described in Hovey's magazine as "new and very beautiful, both in its leaves and flowers; it is by far the most showy of its tribe, and should it prove hardy, it will be a great acquisition." If we are to believe a lecturer before the New York Florists' Club many years later (as reported in the *Florists Exchange* of October 17, 1908), Eugene Bauman, a nurseryman in Morrisania, now New York City, raised several thousand fine seedlings of *C. lanuginosa* and *C. patens* in 1864. The real turning point, however, came when the historian Francis Parkman, an ardent gardener, exhibited *C. Jackmani* in Boston in 1866, and this variety has remained a favorite in American gardens to this day. Three years later Meehan's *Gardener's Monthly* describes three varieties then in bloom in the garden of Alfred Cope of Philadelphia, *C. Jackmani*, *C. Fortunei*, and *C. Standishii*, but remarks that as these are likely to be very expensive for some years, the gardener may be recommended to grow *C. patens*, "which is one of the prettiest of the rather common things." Somewhat later, in 1873, a correspondent of the *Horticulturist*, who had imported Lady Bovill, rubella, and Prince of Wales with disappointing results, recommended *C. Jackmani*, *C. patens*, and *C. Standishii* as the most suitable varieties for American gardens. In the same year, Elbert S. Carman, creator of the Carman

potatoes, imported *C. Henryi* from England, and wrote an enthusiastic account of it in the *London Garden* in 1877.

Accounts of the new treasures appear early in American books and periodicals. For example, Robert Buist's *American Flower-Garden Directory* (of which I have been able to consult only the second edition, published in 1839) describes *C. patens*, *C. florida Sieboldii*, and *C. florida plena*. Most of the references in books and periodicals were at first borrowed from the *Gardeners' Chronicle* and other English papers, and later occasionally even from a French one; and Americans were kept in touch quite accurately with all the new hybrids as soon as they were exhibited in England. As soon as varieties were imported first-hand reports of them began to appear, and ultimately one has such mature articles as that on "The Clematis" by E. S. Rand, Jr., in the *American Journal of Horticulture* in 1868 and Francis Parkman's on *C. Jackmani* in 1870. One comes away from the reading of these early garden papers with considerable respect. Such periodicals as Hovey's *Magazine of Horticulture*, founded in Boston in 1835, *The Horticulturist*, founded by A. J. Downing in 1846, the *Gardeners' Monthly*, founded by Thomas Meehan in Philadelphia in 1859, and the *American Journal of Horticulture*, founded in 1867, hold to a surprisingly high standard, and compare more than favorably with most American garden papers published in our own time. Not many articles on the hybrids written during the last twenty or thirty years are as well-grounded as some of the earlier contributions. I



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Clematis Lady Northcliffe, a deep lavender hybrid of the Lanuginosa Type

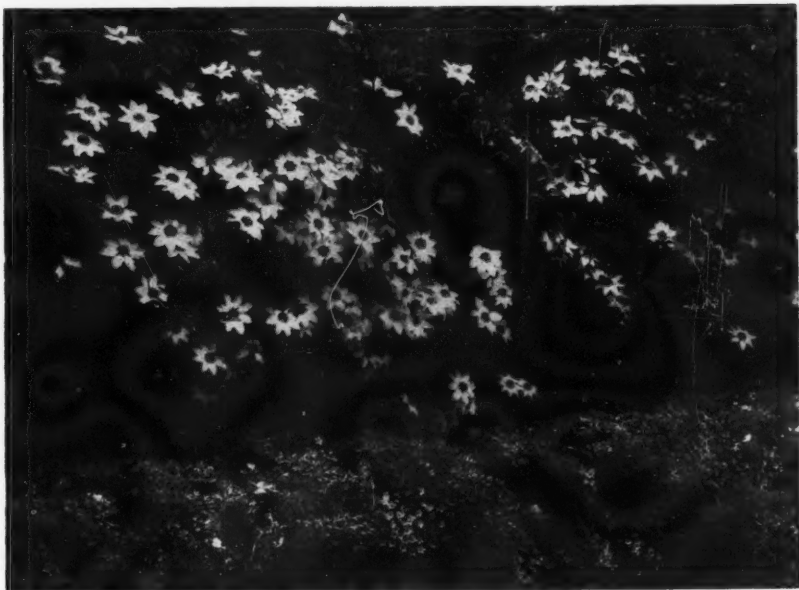
do not wish to speak slightly of what has been written about the hybrids during the present century, for many of the popular articles are useful and interesting, but it is obvious that the best work has been done on the small-flowered species. It is also obvious why this should be so, for leaving professional botanists aside, the amateur can hardly be said to have reached maturity as a *Clematis* lover until he takes a deep interest in the wild species.

Browsing among old nursery catalogues, of which there are interesting collections in Washington, Boston, Ithaca, and New York, one obtains the impression that American nurseries at one time or another have provided us with virtually all the choicest varieties of *Clematis* bred by European hybridists. Interest in the genus, as I have said, began early, and the Winship Nursery, near Boston, in an undated catalogue of the late 1840's or early 1850's, listed seventeen species and varieties, of which four were large-flowered forms, *C. patens*, *C. florida*, *C. florida plena*, and *C. florida Sieboldii*. But perhaps the gradual development of interest can be best illustrated from the catalogues of a single firm, Ellwanger & Barry's Mount Hope Nursery in Rochester, New York. In 1848-49 this firm offered three small-flowered species and one large-flowered, *C. patens*. By 1857 the list had been increased to four small-flowered species and five large-flowered forms, *C. patens*, *C. florida Sieboldii*, *Helena*, *monstrosa*, and *Sophia*. In 1863 the list was substantially the same, except that *monstrosa* had been dropped, and *C. lanuginosa*, *C. lanuginosa pallida*, *Sophia flore pleno*, and *Viticella venosa* had been added. But in

1875 the firm listed 29 large-flowered hybrids in its catalogue, a representative collection of outstanding varieties.

From this time on nursery catalogues are full of *Clematis*; and in an undated catalogue of the Parsons Nursery of Flushing, Long Island, apparently published during the late 1880's, we find 73 large-flowered varieties, the high-water mark of the American nursery trade. During the same decade Peter Henderson & Co. offered 38 varieties in a single catalogue, Henry A. Dreer 29, Ellwanger & Barry 24, and Storrs & Harrison Co. 17. In the 1890's Dreer offered 36, Henderson 22, and Pitcher & Manda 20, while C. H. Joosten, as New York agent of the Boskoop Nursery Association, listed 59. Then apparently there was somewhat of a lull until Bobbink & Atkins offered 35 in 1909, 37 in 1914, and 23 in 1916. But to-day the situation is quite different;¹ and whereas there are ten nurseries in the British Isles that offer more than thirty or forty varieties, and some of them nearly a hundred, only eight varieties have been generally available in American nurseries since the World War and Quarantine 37. These varieties are: Gipsy Queen, Henryi, Jackmani, Madame Baron-Veillard, Madame Edouard André (first exhibited here at the Chicago Exposition in 1893), Ramona, Ville de Lyon, and the double Duchess of Edinburgh. They are robust varieties that suit our climate, but America will not for long be satisfied with so brief a list.

¹Perhaps nothing brings the situation home more clearly than the fact that E. H. Wilson, speaking of the large-flowered hybrids in his *More Aristocrats of the Garden* (Boston, 1928), says: "Altogether there are a score or more of these named varieties, but many are difficult to obtain in this country." (Italics mine.)



Donald Merrett ©

Clematis Miss Bateman, a white hybrid of the Patens type

III. THE PRESENT PROJECT

The first book in any language to deal adequately with the hybrids was Moore and Jackman's *The Clematis as a Garden Flower*, published in London in 1872, at the height of the period of greatest enthusiasm. A revised edition appeared in 1877, and a German translation or rather abridgment was published in 1880 and again in 1889. Though of course out of date in some respects, notably in its treatment of the natural species, it is still a valuable book; indeed, it is even to-day the best book on the hybrids, and it contains a complete list of all those created up to that time. Additional names appear in Jules le Bêle's articles on "The Cle-

matisses" in the *Garden* (London, June-October, 1898; originally published in the *Bulletin de la Société d'Horticulture de la Sarthe*), in Boucher and Mottet's *Les Clématites* (Paris, 1898), and in the article on Clematis by K. C. Davis and Alfred Rehder in Bailey's *Standard Cyclopedia of Horticulture* (New York, 1914); and an article by A. G. Jackman in the *Journal of the Royal Horticultural Society* (1900, page 316) sheds light on the parentage of a considerable number of hybrids. I am greatly indebted to all of these; but the complete files of various horticultural periodicals, supplemented by nursery catalogues, have been my chief sources of information. Periodicals like the *Gardeners' Chronicle*, the



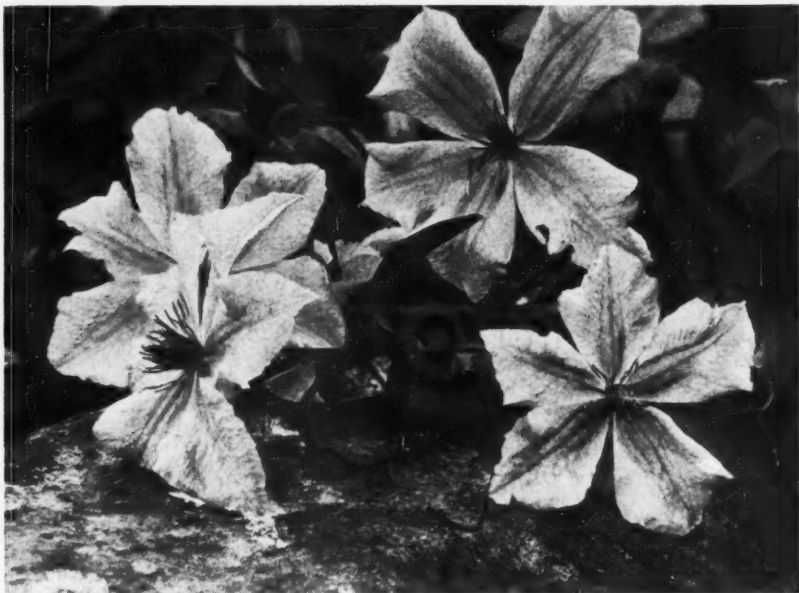
G. W. Harting

Clematis Belle of Woking, a double silver-gray hybrid of the Florida Type

Garden, and the *Florist and Pomologist* in England, the *Revue Horticole* in France, *L'Illustration Horticole* in Belgium, and the *Illustrierte Garten-Zeitung* and *Gartenflora* in Germany, to mention only a few, together furnish a fairly complete record of the history of the hybrids. A very useful bibliography of some of the more important articles on Clematis will be found in the third vol-

ume of Rehder's *Bradley Bibliography* (Cambridge, Mass., 1915).¹

¹I have been greatly indebted in my researches to the libraries and library staffs of the New York Botanical Garden, Arnold Arboretum, Cornell University (including the collection of nursery catalogues of the Department of Floriculture), U. S. Department of Agriculture (including the collection of nursery catalogues of the Division of Fruit and Vegetable Crops and Diseases), Brooklyn Botanic Garden, Horticultural Society of New York, Massachusetts Horticultural Society (especially its large collection of nursery catalogues), and New York Historical Society.



Donald Merrett ©

Clematis Perle d'Azur, a light blue hybrid of the Jackmani Type

The tentative check-list that follows attempts to catalogue all the large-flowered hybrids created in Western Europe and America since the beginning of the nineteenth century, and all the Asiatic hybrids that have found their way into Western gardens, so far as they have been offered for sale by nurserymen, exhibited at flower-shows, or described in the horticultural press. All varieties definitely recognized as small-flowered have been excluded; and for such hybrid forms as *C. eriostemon* (syn. *C. Hendersonii*, *C. Bergeronii*), *C. aromatica* (syn. *C. coerulea odorata*), and *C. jouiniana*, or the various Lemoine hybrids of *C. Davidiana* and the like, the enquirer may turn to Bailey's *Cyclopedia*, Lavallée's *Les*

Clématites à grandes fleurs, Bean's *Trees and Shrubs Hardy in the British Isles*, Rehder's *Manual of Cultivated Trees and Shrubs*, and other works. The question whether a variety is small-, medium-, or large-flowered admits only of a more or less arbitrary answer; and I shall merely say that my standard is not that of Lavallée, who regards as large-flowered every species and hybrid whose flowers are in any way larger than those of *C. paniculata*. I have, however, included three Chinese and Japanese large-flowered species and six of their natural varieties, since they are always grouped with the large-flowered hybrids when offered in nursery catalogues; and for a somewhat similar reason some of

the medium-flowered forms of *C. Viticella* have also been included, some but not all.

After the name of each variety in the check-list the name of the originator or introducer, when known, is given within parentheses; this is followed by the color of the flower and the type to which the variety belongs; and every variety now available in British, French, or American nurseries is indicated by an asterisk. I have called the list tentative, and omissions and inaccuracies will doubtless be found in it; many of the descriptions are incomplete. Though virtually all the important varieties, I think, are recorded, and most of the unimportant, many minor names are still to be listed; indeed, every time I open an old periodical or catalogue I seem to discover an obscure or ephemeral form not on my list. But since I must delay further research, I have decided to print the list as it is, for such usefulness as it may have and in order to invite corrections and additions. It contains about 500 hybrids (as well as 3 species and 6 varieties), but

further research may increase the number to 600 or more. Moore and Jackman's book in 1872 included about 135 hybrids, but the second edition of 1877 contained a considerably larger list. It is impossible at this late date to determine all synonyms, or varieties introduced or offered for sale under two or more names; but even allowing for these, it may be confidently asserted that the number of large-flowered hybrids (including named seedlings of such hybrids) introduced into the gardens of the Western World exceeds 500. Of these about 175 are now grown in European nurseries, and doubtless others are still extant in European gardens.

It should be borne in mind that there are six general types of large-flowered hybrids, the Florida Type and Patens Type, which bloom on old wood, and the Jackmani Type, Lanuginosa Type, Texensis (or Coccinea) Type, and Viticella Type, which bloom on new summer shoots. The botanical and horticultural distinctions between these types are indicated in the two keys that follow.



Donald Merrett ©

Clematis Ville de Lyon, a purplish carmine hybrid of the Viticella Type

IV. KEYS

The following key, adapted from Rehder's key to the whole genus, indicates the botanical distinctions between the five species and one hybrid from which the six types of large-flowered hybrids have been derived:

- A. Sepals spreading, forming a more or less open flower; stamens divergent.
 - B. Styles glabrous; sepals obovate, usually 4.
 - C. Flowers 2-5 centimetres ($\frac{3}{4}$ -2 inches) across; filaments shorter than anthers; bipinnate.....*C. Viticella*
 - CC. Flowers 8-14 centimetres (3-6 inches) across; leaves pinnate
C. Jackmani
 - BB. Styles pubescent; sepals 6 or more, elliptic or ovate, large; filaments as long or longer than anthers.
 - C. Pedicels longer than sepals; leaves glabrous or slightly pubescent beneath.
 - D. Styles of fruit silky; flower-stalk with 2 bracts.....*C. florida*
 - DD. Styles of fruit plumose; flower-stalk without bracts
C. patens
 - CC. Pedicels shorter than sepals; leaves woolly beneath, simple or ternate.....*C. lanuginosa*
- AA. Sepals more or less upright, forming an urn-shaped flower; stamens appressed.....*C. texensis* (syn. *C. coccinea*)

The following key, adapted from Moore and Jackman, indicates the more important horticultural distinctions between the six types of large-flowered hybrids:

- A. Flowering on year-old ripened wood:
 - B. Spring-bloomers.....*Patens Type*
 - BB. Summer-bloomers.....*Florida Type*
- AA. Flowering from the young growing summer wood (all summer and autumn bloomers):
 - B. Flowers more or less open.
 - C. Flowers successional dispersed.....*Lanuginosa Type*
 - CC. Flowers successional massed.....*Viticella Type*
 - CCC. Flowers profusely massed continuous (?).....*Jackmani Type*
 - BB. Flowers bell-shaped or trumpet-shaped.....*Texensis Type*

V. TENTATIVE CHECK LIST

The asterisk * after the name of a variety indicates that it was offered for sale between 1932 and 1934 by one or more nurseries in the British Isles, France, or the United States. The following abbreviations have been used:

Flor., Florida Type
 Jack., Jackmani Type
 Lan., Lanuginosa Type
 Pat., Patens Type
 Tex., Texensis Type
 Vit., Viticella Type

- Abendstern, wine-red, medium size. Vit.
Ada (Jackman), pale mauve with reddish bar. Pat.
Adelina Patti (Cripps), white with dark anthers. Lan.
Admiration* (Jackman), deep salmon shaded violet, white inside. Tex.
alba (Carrière), white. Also called Viticella alba, but not to be confused with the natural variety. Vit.
alba-magna* (Jackman), white, sometimes faintly tinted lavender. Lan.
alba nova, white. Vit.
Albertine (Dauvesse), double white. Pat.
Albert Victor* (Noble), deep lavender or pale mauve, with paler bar. Pat.
Alexandra* (Jackman), pale reddish violet. Jack.
Alfred Grondard (Christen), deep mauve. Lan.
Alice (Simon-Louis), single and semi-double, blue-lilac. Pat.
Amalia (Siebold introduction from Japan), light bluish lilac. Pat.
Amalia regina: see Aureliani.
Amazon (Noble), purplish mauve.
Anatole France (Lemoine), blue.
Andenken an Geheimrat Heyde (Späth), white. Lan.
Anderson's Henryi: see Henryi.
Andersoni*, blue. (?).
André Laurent*, double light violet.
André Leroy (Lemoine), metallic violet, slightly marbled. Lan.
Angelina* (Jackman), pale bluish mauve. Lan.
Annie Wood (Cripps), silvery white with buff anthers. Lan.
Arabella (Lemoine), double, white. Vit.
Arago (Lemoine), violet-purple. Vit.
Ascanio (Lemoine), double, white with lilac edges. Vit.?
Ascotiensis* (Standish), azure blue. Vit.
atropurpurea (Spae), violet-blue. Pat.
atroviolacea (Carrière), deep violet. Vit.
Attraction (Cripps), semi-double, pale, lilac-mauve. Flor.
Aureliani (Briolay-Goiffon), violet-mauve or reddish. Pat.
Aureliana, white (?).
Aurora (Noble), semi-double, rose shaded lilac. Flor.
Aurora Floyd (Townsend), violet with pale white bar. Disappeared before 1872.
Aurora Leigh (Noble), white. Pat.
Avalanche (Lemoine), double, yellowish white. Pat.
azurea: see patens.
azurea grandiflora: see patens and patens grandiflora.
Azure Star, blue.
Bagatelle*, lilac pink. Pat.
Bangholm Belle*, white. See Henryi.*
Barral (Lemoine). Lan.
Barillet-Deschamps* (Lemoine), double, mauve. Flor.
Baroness Burdett-Coutts (Jackman), Solferino pink with white bar. Lan.
Baronne Doé (Carré), lilac with white bar. Lan.
Baronne de Verdières*, double, lilac rose. Pat.

- Beauty of Bangholme (Lawson), lavender. Lan.
 Beauty of Surrey (Jackman), grayish-blue. Lan.
 Beauty of the Bower (Cripps), white slightly tinted with blue. Lan.
 Beauty of Worcester* (Smith), double and single, bluish-violet with white stamens. Lan.
 Bélisaire (Lemoine), lilac changing to white. Lan.
 Belle d'Orléans (Dauvesse), violet shaded purple. Jack.
 Belle Nantaise* (Boisselot), bluish lavender with white bar on back of each sepal. Lan.
 Belle of Woking* (Jackman), double, bluish-mauve to silver-gray. Flor.
 bifrons, light blue shading to dark at edges, silvery-white on back.
 Blue Gem* (Jackman), pale lavender blue. Lan.
 Blue Perfection (Cripps), bluish-mauve. Discarded before 1877. Lan.
 Boskoop Seedling, lavender-blue. Same as *Hybrida Sieboldii*. (See introduction.) The name is also given to a group of seedlings of various colors, *C. Viticella* x *C. integrifolia*.
 Caeligina, ultramarine.
 Calypso (Lemoine), azure blue. Pat.
 candidissima plena (Lemoine), double, white. Pat.
 Captivation (Cripps), pale lavender with bluish midrib. Lan.
 Casimir Périer (Carré), white tinted rose. Lan.
 Cécile (Simon-Louis), semi-double, reddish violet. Pat.
 Charles Noble (Noble), reddish-violet. Pat.
 Circe (Noble), double, blue.
 Clara (Simon-Louis), violet-red to bluish-violet. Pat.
 Claude le Lorrain (Lemoine), semi-double, dark violet-blue. Flor.
 coerulea: see patens.
 Colette Deville* (André Leroy), violet red. Jack.
 Comète*, semi-double, white tinted mauve. Flor.
 Comte d'Aussembourg*, white. Lan.
 Comtesse de Bouchaud* (Morel), satiny rose-lilac. Often misspelled Bouchard. Jack.
 contorta (Carrière), pale lilac to mauve. Vit.
 Coquette* (Lemoine), white. Vit.
 Coste et Le Brix* (Faure), semi-double, lilac. Flor.
 Countess of Egmont (Jackman), pale mauve with creamy-white bar. Lan.
 Countess of Gleichen (Noble), blush-color.
 Countess of Lovelace* (Jackman), double, bluish lilac. Pat.
 Countess of Onslow* (Jackman), violet purple with broad band of scarlet. Tex.
 Cratère (Lemoine), purplish red. Vit.
 Crimson Beauty (Jackman), soft red. Lan. (?).
 Crimson King* (Jackman) vinous red with chocolate anthers, and two whitish stripes down back of sepals. Lan.
 Crippsii (Cripps), bluish mauve. Jack.
 Daniel Deronda* (Noble), purple-blue with yellow center. Vit.
 Darwin (Noble), double, pale mauve.
 D. Bois (Moser), deep scarlet. Tex.

- Déesse (Lemoine), double, white. Flor.
Défi (Lemoine), wine-red. Vit.
delicata (Cripps), blush-white. Flor.
devoniensis (Lucombe), lavender-blue. Lan.
Diane*, bluish-white. Lan.
Direktor Trelle (Späth), double, light purple-violet with whitish stripe.
Docteur Blanchet (Boisselot), rose-lilac. Lan.
Docteur LeBêlé*, dark red.
Dr. Bolle (Späth), double white.
Duchesse de Cambacères (Paillet), azure blue flushed rose. Lan.
Duchess of Albany* (Jackman), pink, darker brown center, streaked creamy white on back. Tex.
Duchess of Connaught (Jackman), double, lilac mauve. Lan.
Duchess of Edinburgh* (Jackman), double, white. Flor.
Duchess of Sutherland* (Jackman), bright reddish, lighter down center.
Also spelled Sunderland. Vit.
Duchess of Teck (Jackman), white. Lan.
Duchess of York* (Jackman), blush pink with deeper band. Tex.
Duke of Albany (Noble), mauve.
Duke of Buccleigh* (Noble), deep lavender. Pat.
Duke of Connaught (Jackman), semi-double, mauve. Lan.
Duke of Edinburgh* (Cripps), violet-purple with reddish sheen. Jack.
Duke of Norfolk (Jackman), deep mauve. Lan.
Duke of Portland* (Jackman), pale flesh cream with crimson bar. Lan.
Duke of Richmond (Jackman), mauve or lavender gray. Lan.
Durandii (Thibaut & Keteleer or Durand?), blue-violet. Also called *integri-folia* Durandii. *Integrifolia* x *Jackmani*?
Durandii alba, white form of Durandii.
Durandii pallida, paler violet-rose form of Durandii.
Earl of Beaconsfield* (Jackman), deep mauve with plum colored bar. Lan.
Earl of Egmont (Jackman), deep reddish purple. Jack.
Early Purple (Jackman), plum-color. Pat.
E. Booth (Noble), pale plum-color, outer edge white.
Edith Jackman* (Jackman), blush white with wine-red bar. Pat.
Edith Mallett (Noble), pale blush with crimson feather at base.
Edouard André (Morel). Vit.
Edouard Desfossé* (Desfossé), deep shaded mauve with dark bar. Pat.
Elaine (Noble), light purplish mauve. Flor.
Elfenreigen, lilac-rose.
Elsa Späth (Späth), bright blue with darker center. Usually misspelled
Elsie Späth in England. Lan.
Emblème (Lemoine), double, pale lilac. Lan.
Emerald Queen (Cripps), white, mottled green. Discarded before 1877.
Lan.
Emile Faure, semi-double. Flor.
Empress of India* (Jackman), light violet purple with deeper purple bar.
Lan.
Enchantress* (Cripps), double, white. Flor.

- Endymion (Noble), pale gray.
Epiphania, purplish blue. Lan.
Estelle Russell (Noble), white. Pat.
Etoile d'Angers (Gégu), lavender blue. Lan.
Etoile de Paris* (Christen), violet with white bar. Pat.
Etoile Violette* (Morel), deep blue streaked with carmine. Jack.
Eugène Delattre (Christen), lavender blue. Lan.
Excelsior (Cripps), deep mauve with plum-colored bar, single and double.
Lan.
Fair Rosamond* (Jackman), blush white with indistinct wine-red bar. Pat.
Fairy Queen* (Cripps), pale flesh with rosy bar. Lan.
Faust (Lemoine).
Fimbriata (Van Geert).
Florence (Jackman), pale mauve. Lan.
florida (Chinese species, long cultivated in Japan), the parent of many hybrids; creamy white with green band on back of each sepal.
florida bicolor: see florida Sieboldii.*
florida Fortunei: see patens Fortunei.
florida pallida (Lemoine), pale flesh-color. Flor.
florida plena (variety of *C. florida*), double, with greenish white or creamy white sepals; imported from Japan; also called florida flore pleno.
florida Sieboldii* (variety of *C. florida*), creamy white with the stamens partly changed into purple petal-like staminodes; imported from Japan by Siebold. Usually known as *C. Sieboldii* or *C. florida bicolor*.
Florida violacea (Lemoine), marbled-violet with lighter bar. Flor.
Forget-me-not (Cripps), silvery lavender with bluish midrib. Lan.
Fortunei: see patens Fortunei.
Fortunei coerulea: see John Gould Veitch.
francofurtensis* (Rinz), deep purplish blue. Similar to Guascoi. Vit.
François Gerbeaux (Carré), white lightly suffused with azure. Lan.
François Morel (Morel), deep rosy purple with red bar. Jack.
fulgens (Simon-Louis), dark mulberry purple. Lan. or Jack.?
Gablenzii (private garden in Kiel), deep violet blue. Also called florida Gablenzii.
Gartendirektor Petzold (Späth), opening lilac, changing to white. Lan.
Gem* (Baker), deep lavender or grayish blue. Also called The Gem. Lan.
General Grant (Burbank?), dark reddish purple. Jack?
George Cubbitt (Jackman), light lavender or pale lilac mauve. Pat.
Georges Ohnet (Lemoine), light violet. Vit.
George Eliot (Noble).
gigantea (Christen), rosy white changing to pure white. Lan.
Gypsy Queen* (Cripps), bright velvety purple, with three reddish ridges outlining two whitish furrows on back of the sepals. Also spelled Gypsy Queen. Jack.
G. J. Patijn, or T. J. Patyn? See T. J. Patyn*.
Gloire de St. Julien* (Carré), white flushed pale gray to light mauve. Lan.
Gloria Mundi (Cripps), white shaded lilac. Lan.
Grace Darling* (Jackman), delicate rose carmine. Tex.

- Grand Duchess* (Cripps), white slightly flushed rose pink. Lan.
Grande-Bretagne, mauve. Lan.
grandiflora mutabilis (Dauvesse), violet. Pat.
Gravetye Beauty (Morel). Vit.
Gringoire (Lemoine), semi-double, lilac-blue. Vit.
Guascoi (Guasco), violet purple. Similar to francofurtensis*. Vit.
Guiding Star* (Cripps), purplish shaded crimson. Lan.
Haldine: see Huldine.
Harry Richmond (Noble), lavender-gray. Discarded before 1877. Pat.
Hedwige Heinemann (Heinemann).
Helena (Siebold introduction from Japan), white with yellow stamens.
Henry* (Anderson-Henry), creamy white. Also known as Lawsoniana Henryi. Lan.
Herbert Spencer (Lemoine), dark violet blue. Jack.
Hildegard Späth (Späth), azure. Lan.
Huldine (Morel), pale mauve with purple markings on the reverse. Vit.
hybrida Andegavensis, dark blue. Pat.
Hybrida perfecta: see perfecta.
Hybrida purpurea: see purpurea hybrida.
Hybrida splendida*: see splendida.
Hybrida Sieboldii (B. Droog), lavender-blue. Also called Hybrida Sieboldia, or even C. Sieboldi, but not to be confused with the true florida Sieboldii (see introduction). Lan.
Imogene (Noble), white.
Impératrice Eugénie (Carré), white. Lan.
imperialis (Carré), blue. Pat.
insignis, lilac-violet. Pat.
Iris (Lemoine), reddish violet. Vit.
Jackmani* (Jackman), velvety purple. Also spelled Jackmanni and Jackmannii¹. Jack.
Jackmani alba* (Noble), grayish white. Jack.
Jackmani rubella: see rubella.
Jackmani rubra* (Houry), purplish red. Jack.
Jackmani superba*, dark violet purple. Jack.
Jeanne d' Arc* (Dauvesse), grayish white. Lan.
John Brown (Noble), purple. Lan.
John Gould Veitch* (Fortune introduction from Japan), double, lavender blue. Also called C. Veitchii. Flor.
John Murray (Jackman), purplish mauve. Pat.
J. P. Gassiot (Jackman), French white with mauve bar. Lan.
Juanita (Noble), semi-double, silver-gray. Flor.
Julia (Cripps), double, pale blue mauve with white center. Lan.
kermesina: see Viticella kermesina.*
King Arthur (Noble), mauve purple. Lan.

¹"The proper spelling is *Jackmani* and not *Jackmanni*, the name of Messrs. Jackman having only one n. All catalogues and periodicals that mention the plant use this improper spelling, and strangely enough, Messrs. Jackman themselves have fallen into this error in their catalogues and on their labels."—Edouard Andre, in *Revue Horticole*, 1866, page 209.

- King Edward VII* (Jackman) puce violet with crimson bar. Lan.
 King George V* (Jackman), flesh color with pink bar. Vit.
 King of the Belgians* (Jackman), light mauve with blue bar. Pat.
 King's Norton*, double, lavender blue.
 Krao. Offered by Pitcher and Manda in 1893.
 Lady Alice (Noble), deep lilac mauve. Pat.
 Lady Alice Neville (Cripps), porcelain blue. Pat.
 Lady Ashcombe (Ivery), bluish touched with white.
 Lady Audley's Secret (Townsend), lavender. Disappeared before 1872.
 Lady Betty Balfour* (Jackman), deep velvety purple. Vit.
 Lady Bovill (Jackman), grayish blue. Vit. or Lan.?
 Lady Camden (Cripps), white shaded lilac, with deeper lilac bar. Lan.
 Lady Caroline Neville* (Cripps), pale mauve with darker bar. Lan.
 Lady Cicely Neville (Cripps), white. Lan.
 Lady Constance Kennedy (Noble), white with plum-colored center.
 Lady Emma Talbot (Noble), white with mauve margins. Pat.
 Lady Londesborough* (Noble), silver-gray with paler bar. Pat.
 Lady Maria Meade (Cripps), French-white with lilac bar. Lan.
 Lady Northcliffe* (Jackman), deep lavender, tinted bright blue, with purple base and white stamens. Lan.
 Lady Stratford de Redcliffe (Jackman), slaty lilac, with greenish tinted bar. Jack.
 La Fontaine (Lemoine). Lan.
 La France* (Gégu), deep cobalt blue. Lan.
 La Gaule (Lemoine), single or double, white. Lan.
 La Géante* (Christen), white. Lan.
 La Lorraine* (Lemoine?), light petunia purple suffused with pink. Pat.
 Lamartine (Lemoine), pale slaty blue. Vit.
 La Mauve (Cobbett), light mauve. Vit.
 La Nancéienne* (Lemoine), dark violet. Vit.
 lanuginosa (Chinese species), the parent of many hybrids; pale lavender, sometimes white.
 lanuginosa atropurpurea (Townsend), reddish violet. Disappeared before 1872.
 lanuginosa alba magna: see alba-magna*.
 lanuginosa candida* (Lemoine), grayish-white. Lan.
 lanuginosa floribunda (Froebel).
 lanuginosa Hollandii (Townsend), violet with reddish bar. Disappeared before 1872. Lan.
 lanuginosa Henryi: see Henryi*.
 lanuginosa lilacina (Froebel).
 lanuginosa longipetala (Japanese), similar to lanuginosa pallida. Lan.
 lanuginosa nivea* (Lemoine), pure white with pale brown anthers. Lan.
 lanuginosa pallida (Japanese), paler blue than the type. Lan.
 lanuginosa perfecta (Froebel), violet-mauve. Lan.
 lanuginosa purpurea: see Madame Grangé*.
 lanuginosa violacea (Townsend), dark purple. Disappeared before 1872.
 lanuginosa violacea (Noble), satiny blue flushed claret down center. Lan.

- La Nympe (Lemoine), milky white.
La Pourpre (Lemoine), purplish red. Vit.
Lasurstern* (Goos & Koenemann), deep purplish blue. Pat.
latifolia (Lemoine), azure-blue. Lan.
Lavender Queen, lavender.
Lawsoniana* (Anderson-Henry), rosy purple with darker veins. Lan.
Lawsoniana Henryi; see Henryi*.
Le Cid* (Lemoine), mauve violet. Pat.
Leonidas* (Lemoine), similar to kermesina but larger. Vit.
Leviathan (Cripps), pale mauve tinted green. Disappeared before 1877. Flor.
lilacina floribunda* (English garden), pale grayish-lilac. Lan.
lilacina plena (Lemoine), double, lilac. Flor.?
Lily Harris: see Miss Lily Harris.*
Lord Beaconsfield: see Earl of Beaconsfield.*
Lord Derby (Jackman), pale lavender. Pat.
Lord Gifford* (Noble), reddish lilac. Pat.
Lord Henry Lennox (Noble), mauve. Pat.
Lord Londesborough* (Noble), bluish lilac with purplish red bar. Pat.
Lord Lytton (Noble), bluish purple. Pat.
Lord Mayo (Jackman), rosy lilac. Pat.
Lord Napier* (Noble), deep mauve with paler mauve bar. Pat.
Lord Neville* (Cripps), dark purplish plum-color. Lan.
Lord Polwarth (Jackman), dark motley violet with red bar. Lost before 1877. Jack.
Louisa (Siebold introduction from Japan), white. Pat.
Louisa plena (Simon-Louis), semi-double, white. Pat.
Louise Carrière (Carrière), bluish lilac with pale bar. Vit.
Louis Van Houtte (Cripps), violet. Lan.
Louis Van Houtte (Lemoine), semi-double, rosy white. Lan.
Lucie (Simon-Louis), violet-purple with brighter bar. Pat.
Lucie Lemoine* (Lemoine), double, purple. Flor.
Luloni (Lulon), or azurea gigantea Luloni, a large form of *C. patens* raised from seed in 1850.
Madame Abel Chatenay* (Boucher), white tinted mauve.
Madame Alfred Bonneau* (Faure), semi-double, rosy white. Flor.
Madame André Lacaux* (Faure), semi-double, rosy mauve slate-colored. Flor.
Madame Baron-Veillard* (Baron-Veillard), pale lilac rose. Jack.
Madame Bosselli (Christen), mauve with reddish bar. Lan.
Madame Briot*, light violet. Lan.
Madame Charles Lacaux*, lavender-mauve with violet bar. Flor.
Madame Crousse, deep blue.
Madame Edouard André* (Baron-Veillard), reddish purple. Jack.
Madame Emile Sorbet (Paillet), lilac-violet to brighter lilac. Lan.
Madame Eugène Delattre (Christen).
Madame Furtado-Heine (Christen), vinous red. Lan. or Vit.?
Madame F. Gerbeaux (Tallandier), dark lilac with grayish bar.
Madame Georges Boucher*, deep velvety purple. Jack. or Lan.?
Madame Grangé (Grangé), deep violet with maroon midrib. Sometimes

- misspelled Granger. Also called lanuginosa purpurea. Vit.
Madame Isidore Salles (Carré), white edged with pale rose. Pat.
Madame J. de Puligny (Dauvesse), semi-double, lilac-violet. Pat.
Madame Jouannet* (Faure), semi-double, mauve with amaranth tips. Flor.
Madame Jules Correvon* (Lemoine), dark red. Vit.
Madame Le Coultre*, white with white anthers; almost identical with Marie Boisselot. Lan.
Madame Lerocher (Morel), white margined with pink. Tex.
Madame Maxime Cornu (Christen). Lan. or Pat.?
Madame Méline (Christen), double, white. Pat.
Madame Moret (Morel), vinous red. Tex.
Madame Moser (Lemoine), white. Vit.
Madame Raymond Guillot (Morel), purple. Tex.
Madame Thibaut (Grangé), bright blue or lilac. Lan.
Madame Torriani (Noble), light purplish mauve. Same as Mademoiselle Torriani?
Madame Van Houtte* (Cripps), white, later suffused with mauve tint.
Madame Victor Vandermarcq* (Faure), semi-double, white. Flor.
Mademoiselle Albani (Noble), pale lilac mauve. Jack.
Mademoiselle Elisa Schenck (Grangé), violet-blue. Jack.
Mademoiselle Henriette de Puligny (Dauvesse), dark blue. Lan.
Mademoiselle Kellogg (Noble), white. Pat.
Mademoiselle Torriani (Noble), solferino pink. Also spelled Torriana. Pat.
Ma Favorite, white. Pat.
magnifica* (Jackman), purple with crimson shading. Jack.
Maid of Kent (Cripps), pale silvery-lilac. Pat.
Maiden's Blush (Jackman), blush white with rosy lilac tint at base. Pat.
Marcel Moser* (Moser), mauve-violet with old rose bar. Lan.
Margaret Dunbar (Noble), blue with purplish tinge and white center. Pat.
Margaretta?
Marie (Simon-Louis), purplish blue. Pat.
Marie Boisselot* (Boisselot), pure white. Lan.
Marie Deschamps (Moser), mauve with reddish edge. Lan.
Marie Desfossé (Desfossé), white. Lan.
Marie Lefebvre (Cripps), resembling Lady Caroline Neville but slightly darker mauve. Lan.
Marie Madeleine (Le Béle), mauve, Jack.?
Marie Louise Le Béle (Le Béle), white. Pat.
Marie Treyve*, mauve.
marmorata (Jackman), light mauve speckled white. Vit.
Marquis de Dampierre (Lemoine). Vit.
Marquis of Salisbury (Jackman), maroon-purple or dark plum. Jack.
Mathieu de Dombasle* (Lemoine), small double, violet mauve. Vit.
Maud (Noble), pale grayish-mauve. Pat.
Max Leichtlin (Heinemann), deep blue. Lan.
May Queen (Noble), white down center, pale amethyst on outer edge. Pat.
Middlemarch: see The Czar.
Minister Doctor Lucius (Heinemann), semi-double, deep blue. Lan.

- Minos (Lemoine), blue flushed carmine-red. Pat.
Miss Bateman* (Noble), white with cream-colored bar. Pat.
Miss Braddon (Townsend), lilac-purple. Disappeared before 1872.
Miss Cavell* (Faure), semi-double, white with greenish bar. Flor.
Miss Crawshay* (Jackman), solferino pink. Pat.
Miss Lily Harris*, delicate mauve with purple stamens.
M. Koster*, reddish. Pat.
Modèle (Lemoine), lilac with reddish bar. Lan.
modesta* (Modeste-Guérin), pale blue. Also called *Viticella modesta*. Vit.
(or Jack.?)
Monsieur Georges Magne (Moser), rose lilac with red bar. Lan.
Monsieur Grandeau (Lemoine), pale mauve with violet edges. Vit.
Monsieur Léon Beaulieu, semi-double, lavender mauve with greenish bar
and tips. Flor.
Monsieur Th. Lacroix (Makoy), rosy mauve.
Monsieur Tisserand (Lemoine), white with bluish edges. Vit.
monstrosa* (Siebold introduction from Japan), semi-double, white. Also
called bicolor monstrosa. Pat.
Morikata Oké (Jackman), silver-gray with darker margins. Lan.
Mr. Badger (Standish), mauve-lilac. Pat.
Mr. James Bateman (?), dark purple. Vit. See Mrs. James Bateman.
Mrs. Bush*, deep lavender. Lan.
Mrs. Charles Malmö* (Mrs. Jack Rines), blue-lavender. Seedling of John
Gould Veitch raised in Seattle.
Mrs. Cholmondeley* (Noble), wisteria blue. Jack.
Mrs. George Jackman* (Jackman), white with creamy bar. Pat.
Mrs. G. Mitchell Innes (Anderson-Henry), double, pale lavender-blue. Flor.
Mrs. Henry Wood*, pale flesh with pink bar; similar to Fairy Queen and
Ville de Paris.
Mrs. Hope* (Jackman), satiny mauve with darker bar. Lan.
Mrs. Howard Vyse (Noble), white tinted mauve at margins. Pat.
Mrs. James Baker, whitish, ribbed with dark carmine. Pat.
Mrs. James Bateman (Jackman), reddish lilac to pale lavender. Jack.
Mrs. Melville (Anderson-Henry), pale mauve. Lan.
Mrs. Moore (Jackman), white with slight mauve bar. Lan.
Mrs. Nasmyth (Cripps), white with yellow anthers. Lan.
Mrs. Patijn, light blue. Lan.
Mrs. Quilter* (Standish), pure white. Pat.
Mrs. S. C. Baker* (Cobbett), French-white with claret bar. Pat.
Mrs. Spencer Castle* (Jackman), pale mauve pink. Vit.
Mrs. Villiers Lister* (Noble), white with pale rosy-lilac base. Pat.
Négresse (Lemoine), dark velvety purple. Vit.
Neige et Cerise, white edged cherry-red. Vit.
Nelly Koster*, pearl-white. Pat.
Nelly Moser* (Moser), light mauve with reddish bar. Lan.
Neptune (Lemoine), pale lilac or blue-violet. Lan.
Nero (Jackman), claret-purple. Pat.
nigricans (Simon-Louis), deep purple, almost black. Jack.

- Nigrescens, black purple. Same as nigricans?
Norma* (Lemoine), semi-double, mauve. Lan. or Flor.?
Nordstern, violet-mauve to lavender-blue.
Odysée (Lemoine), semi-double, pale lilac rose. Flor.
Oriflamme* (Morel), small, violet-red with minute flecks of white. Vit.
Orleanensis, see *Revue Horticole*, 1897, page 224.
ornata (Lemoine), violet tinted bronze with darker bar. Lan.
Ostrich Plume (Burbank), double, white. Pat. or Flor.
Othello (Cripps), lilac purple. Vit.
Otto Froebel* (Lemoine), grayish-white to azure-rosy-lilac. Lan.
Palmyre (Lemoine), white with carmine edges. Vit.
patens (Japanese species), white to violet or violet-blue; the parent of many hybrids. Also known as *C. coerulea* and *C. azurea*, or even *azurea grandiflora*.
patens amethystina plena (Lemoine), double white. Pat.
patens grandiflora (variety of *C. patens*), a larger form of *C. patens*. Also known as *azurea grandiflora*.
patens Fortunei (variety of *C. patens*), double, creamy white becoming pink. Also known as *C. Fortunei* and *C. florida Fortunei*.
patens floribunda (Lemoine), rosy-tinted white. Pat.
patens Gablenzii: see *Gablenzii*.
patens hybrida Sieboldii: see *Hybrida Sieboldii*.
patens Standishii* (variety of *C. patens*, or possibly a cross between *C. florida* and *S. patens*), delicate light mauve-purple. Also known as *C. Standishii*.
patens violacea, purplish violet.
Paul Avenel (Christen), pale lilac. Lan.
Pellieri (Carré), pale violet. Lanuginosa x recta.
perfecta (Simon-Louis), French-white. Lan.
Perfection (Froebel), lilac-mauve. Lan.
Perle d'Azur* (Morel), sky-blue. Jack.
Petrarch (Jackman), creamy white. Lan.
Pirate King (Noble), pale plum. Jack.?
picturata (Jackman), pale mauve, mottled with purple. Jack.
Polarlicht, light blue.
Pourpre Mat*, deep purple-violet. Vit.?
Precision (Jackman), pale lilac. Pat.
Président Blanchet (Boisselot). Lan.
Président G. G. Huot (Carré), white. Lan.
Président Grévy (Christen), deep lilac. Lan.
Prince Alfred of Edinburgh (Jackman), pale mauve with lavender bar. Pat.
Prince Hendrick*, or Prins Hendrick, azure blue. Lan.
Prince of Wales (Jackman), puce-purple. Jack.
Princess Beatrice (Noble), pale mauve.
Princess of Wales* (Jackman), deep bluish mauve. Lan.
Princess Louise (Jackman), bluish-lilac with reddish strain at base. Discarded before 1877. Jack.
Princess Mary (Noble), pale pink with whitish bar. Pat.

Prophétesse, dark violet.

Proteus* (Noble), mauve with white anthers, double. Flor.

pulcherrima (Cripps), white with pale lavender bar. Lan.

purpurea elegans* (Cripps), deep violet-purple. Lan.

purpurea hybrida (Modeste-Guérin), deep purplish-violet. Vit.

purpurea plena (Morel), double, purple. Vit.

purpurea plena elegans* (Morel), double, deep purple. Vit.

Puvis de Chavannes (Lemoine), dark violet. Vit.

Queen Alexandra* (Jackman), pale lavender with lilac-purple base. Lan.

Queen Guinevere (Noble), white with creamy tinge. Pat.

Queen of Lavenders (Cripps), mauve lilac. Lan.

Ramona*, lavender-blue. Same as *Hybrida Sieboldii* (see introduction)? Lan.

Regenbogen, carmine-violet with white stamens.

reginae (Anderson-Henry), deep mauve or lavender blue. Discarded before 1877. Lan.

Reine Blanche (Cobbett), greenish-white. Discarded before 1877. Lan.

Reine des Bleues (Boisselot), blue. Jack.

Reine des Doubles (Gerbeaux), double, white. Pat. or Flor.?

Renaulti *coerulea grandiflora* (Dauvesse), violet-blue with purplish-rose bar. Jack.

Rendatlerii (Carré), white with yellow anthers. Pat.

René Allégret, semi-double, blue. Pat.

René Moser (Moser), mauve with red bar. Lan.

René Cassegrain* (Grandes Roseraies), azure-mauve. Lan.

Rev. Canon Oakley (Townsend), pale colored. Disappeared before 1872.

rhodochlora (Paillet), two vinous red sepals and two green.

Robert Hanbury (Jackman), bluish-lilac with edges flushed red. Lan.

Rosace (Lemoine), double, tinted lilac at ends. Flor.

Royal Purple (Jackman), bluish-purple. Jack.

Royal Velours, dark velvety purple. Vit.

rubella* (Jackman), velvety claret purple. Sometimes called Jackmani rubella. Jack.

Rubens (Lemoine), bluish purple. Vit.

rubra *grandiflora**, purplish carmine, medium-size. Also known as *Viticella rubra grandiflora*. Vit.

rubro-violacea (Jackman), maroon-purple. Jack.

Sabrina (Noble), pale lavender. Pat.

Samuel Moulson (Jackman), mauve with rosy bar. Lan.

Sarah Bernhardt (Noble), double, pinkish lilac. Flor.?

semperflorens: see *Durandii*.

Sensation* (Cripps), pale grayish-blue. Lan.

Sidonie. Vit.

Sieboldia: see *Hybrida Sieboldii*.

Sieboldii: see *florida Sieboldii** and *Hybrida Sieboldii*.

Sigurd, double, porcelain lilac edged light pink. Pat.

Sir Garnet Wolseley* (Jackman), bluish ground overcast with bronze, plum-red bar. Pat.

Sir Robert Napier (Jackman), reddish purple. Lan.

- Sir Trevor Lawrence* (Jackman), deep carmine. Tex.
Smith's Snow-White: see Snow-White Jackmani*.
Snowdrift (Burbank), double, white. Flor. or Pat.
Snowflake (Noble), semi-double, white. Flor.
Snow-White Jackmani* (Smith), pure white. Also called Smith's Snow-White. Jack.
Soldat Inconnu* (Faure), double, white. Flor.
Sophia (Siebold introduction from Japan), lilac purple, shading to greenish straw color down center of each sepal. Pat.
Sophia plena (Siebold introduction from Japan), similar to Sophia but semi-double. Also called Sophia flore pleno. Pat.
Souvenir de Cardinal Wiseman (Townsend), reddish with pale bar. Disappeared before 1872.
splendida* (Simon-Louis), maroon-purple. Also called hybrida splendida and splendens. Jack.?
Standishii: see patens Standishii*.
Star of India* (Cripps), reddish-plum with red bar. Jack.
Stella* (Jackman), light violet with reddish plum bar. Pat.
Sternschnuppe, pale lilac-rose.
Sternenwunder, cornflower-blue with silvery stamens.
Sylph (Cripps), white with mauve tinge on exterior. Pat.
Symesiana (Anderson-Henry), pale mauve. Also called Lawsoniana Symesiana and Symeana. Lan.
Thamara (Lemoine), double, sky-blue. Pat.
The Bride* (Jackman), white with yellow stamens. Pat.
The Czar (Noble), purple. Jack.
The Gem: see Gem*.
The Kelpie (Noble), gray. Pat.
The Kelpie's Bride (Noble), white. Pat.
Thémis (Lemoine), carmine-rose. Vit.
The Premier: see Proteus.
The President* (Noble), bluish purple with reddish-plum bar. Jack.
The Queen* (Jackman), delicate lavender or mauve-lilac tint. Pat.
The Shah (Cobbett), lilac-blue. Lan.
Thomas Moore (Jackman), puce violet with white stamens. Jack.
Thomas Tennent* (Anderson-Henry), white flushed pale lilac, semi-double. Flor.
T. J. Patyn*, double, pale blue. Flor.
Triumphant (Cripps).
tunbridgensis* (Cripps), pale violet. Jack.
Undine* (Noble), double, blue tinted purple or rosy lilac. Flor.
Unique (Jackman), pale yellowish green. Flor.
Uranus* (Lemoine), deep violet purple. Pat.
Vagabonde, pale rose deepening towards the edges.
Van Houettei (Carré), white tinted violet. Lan.
Veitchii: see John Gould Veitch.

- velutina purpurea* (Jackman), dark mulberry-purple. Jack.
venosa: see *Viticella venosa*.
venosa grandiflora (Lemoine). Vit.
venosa violacea (Lemoine), darker than venosa. Vit.
Venus Victrix* (Cripps), double or semi-double, lavender. Flor.
Verschaffeltii (Carré), pale blue with deeper tint at edges. Pat.
Vesta (Jackman), white with creamy bar. Pat.
Vestale (Lemoine), white bordered with lilac. Pat.
Victor Céserole* (Froebel), blue tinted rose. Lan.
Victoria* (Cripps), reddish-lilac. Lan. or Jack?
Victor Lemoine (Carré), blue-tinged with violet. Pat.
Ville de Limoges*, double, pure white. Flor.
Ville de Lyon* (Morel), purplish carmine-red. Vit.
Ville de Paris* (Christen), white to mauve with reddish bar. Lan.
violacea (Spae), greenish straw-color with margins and veins of dull wine-red. Pat.
Viscount Neville: see Lord Neville.
Virginale (Lemoine), double, rosy lilac. Pat.
Viticella alba: see *alba*.
*Viticella alba luxurians**, white with green tips, medium-size. Vit.
Viticella amethystina (Jackman), pale violet-blue. Discarded before 1877. Vit.
Viticella atragenoides, blue, paler towards center. Vit.
Viticella atrorubens, rosy crimson. Vit.
*Viticella coerulea grandiflora**, azure-blue. Vit.
*Viticella kermesina** (Lemoine), wine-red, medium-size. Also known as *kermesina*. Vit.
Viticella Mooreana (Jackman), deep violet. Not introduced? Vit.
Viticella pallida (Jackman), lilac with red bars. Vit.
Viticella purpurea plena: see *purpurea plena*.
Viticella purpurea plena elegans: see *purpurea plena elegans*.
Viticella rosea, small, rose. Vit.
Viticella rubra grandiflora: see *rubra grandiflora**.
Viticella venosa (Krampen or Wilke?), reddish purple. Also called *venosa*. Vit. (See also *venosa grandiflora* and *venosa violacea*.)
Viviaud Morel (Morel). Vit.
Wallufer Rebe, semi-double, wine-red.
Waverly (Burbank), semi-double, white. Pat. or Flor.
W. E. Essington (Jackman), reddish-violet. Jack.
W. E. Gladstone* (Noble), lilac, lighter down center. Lan.
William Cripps (Cripps), claret purple. Not introduced? Jack.
William Kennett* (Cobbett), deep lavender. Lan.
Willisoni (Willison), single and double, pale mauve. Flor.
Xerxes* (Noble), violet lined with purple. Pat or Jack?
Yvette Houry*, semi-double, azure-blue. Lan.
Zanoni (Noble), mottled lilac. Jack.
Zauberstern, lilac-rose.

TROUTBECK, Amenia, New York.

A Book or Two

The Winter Diversions of a Gardener.

By Richardson Wright. J. B. Lippincott Company, Philadelphia, Pa., 1934. 356 pages, illustrated. \$2.50.

Mr. Wright has been reading again and having discovered so much of interest and delight, in this book opens many doors for readers who perhaps have not made as many excursions into the past as he. Unlike more horticultural texts, its reading will not spur you to the necessities of immediate garden activity; will not give you a feeling of guilt for garden chores untouched, but will give you the sure knowledge that there are more kinds of garden activities than you have discovered up till now.

Garden Wise and Otherwise. By Joshua Freeman Crowell. Bruce Humphries, Inc., Boston, 1934. 153 pages, illustrated.

Since Virgil wrote the *Georgics* authors have striven to combine poetry and horticultural precepts. This volume contains less of precept than of lore, less of lore than of sentiment. The sentiment, however, is sincere and as wholesome as the earth where the flowers inspiring it have their roots. One feels this sincerity despite the too obvious effort to convey ecstasy by means of the exclamation point.

The book offers a variety of verse forms and techniques—some merely the brief identifications of the rimed dictionaries, some the awkward verbiage of the assigned poetic task, some versified humor about cabbages and beets, and many lyric passages that renew one's appreciation of familiar garden friends.

In his verses *By Way of Preface* the author expresses his aim, which

may justifiably expect realization:

I only hope these sketches will pleasantly amuse

The reader, perhaps inspire, at least enthuse

All garden-minded who my offerings peruse.

While it is not the ultimate achievement in poetic encyclopaedias for the garden lover, the book is an interesting contribution to garden literature by a gardener and a poet. F. L.

Another Garden Notebook. By Alfred Putz. Doubleday, Doran, Garden City, New York, 1935. 214 pages, illustrated. \$1.50.

Another very practical notebook from Mr. Putz, garden editor of the *New York Herald-Tribune*, has just appeared. Its chapters are grouped according to the calendar, with a topic for each week, that is timely and pertinent, and utterly different, each from the other. It is written simply and clearly so that the veriest beginner will have no fear to set out on garden practice with this in hand.

What Happens in My Garden. By Louise Beebe Wilder. The Macmillan Company, New York, 1935. 258 pages, illustrated. \$3.00.

Whatever Mrs. Wilder may write is certain to be pleasant reading and this new book is no different from its fellows. With the rock garden and rock gardeners in mind, Mrs. Wilder travels and re-travels her garden path, gathering her notes, silenes here, thymes there, flax and iris, mullein and rue, and although some of it is reminiscent of periodical utterance, it is pleasant to have it all under one cover.

The Gardener's Pocketbook

Maroon-Throated Erythronium

I have just received my April number of NATIONAL HORTICULTURE and have read your account of the *Maroon-Throated Erythronium* with a great deal of interest.

In the spring of 1930 I found a small colony—probably two dozen plants—of what seems to be the same flower you describe. The blossom was larger than the type, and I think it holds its head up more erectly also. It is very dark maroon at the center, shading toward the tips of the petals to the regular yellow, altogether a most striking flower.

These plants were growing with the regular yellow Trout lilies, so I put them down as sports. I brought home one bulb for my garden, and incidentally the bulbs were down a good eight inches; then I forgot all about it until the spring of 1932, when it blossomed. I suppose it sent up leaves the previous year, but I didn't happen to notice them. It has blossomed each year since.

This last spring I dug up six more of the bulbs because the woods where I found them growing is being gradually cut over. I saved and sowed seeds of the first blossom in my garden, but as I am told that it takes seven years for seedlings to get to the blossoming stage, I have a long wait before I can see if they come true.

Our leading botanist in this locality, a man over eighty, who has been all over this and adjacent countries, and has done a great deal of work with the New York State Botanist, tells me that in over fifty years of this work he has

never seen a Trout lily like those I found. So, I think we have something pretty fine, and if it does come true from seed, it will be a rival of the California *Erythroniums* for beauty.

The plants I found were growing in a beech wood in a limestone region.

I should be glad to learn whether or not you have heard of any other discoveries of this sport.

GRACE B. GRIFFETH.

Rochester, N. Y.

Rhododendron japonicum (See page 95)

This is a stoutly branched azalea which grows up to 6 feet in the garden or shrubbery border and which is one of the most strikingly colorful of the hardy azaleas. Besides this, it has the additional advantage of being reliably hardy in cold climates and show signs, also, of being less sensitive than some of the other azaleas to soils that are none too acid. I do not mean that *R. japonicum* will endure alkaline conditions—for it will not—but it seems to do better than some of the rest in Central New York State where soil acidity is maintained with difficulty. These combined advantages should give it a place towards the top of the list of good things for the northeastern United States.

R. japonicum has long been confused with a Chinese species, *R. molle*, and is almost indistinguishable from it in some of its variations, but a sharp difference exists between the two when hardiness and adaptability to American conditions is concerned. I question that there is any good morphological

difference between the two species which will not break down when certain individuals of the two sorts are compared, so they are probably little more than geographical forms of the same original ancestry. But *R. japonicum* comes from a region not unlike our own, while *R. molle* comes from a region of wet summers and winters that are considerably milder than those of New England. Hence, for horticultural purposes, a clear distinction between the two species needs to be made.

In color, both species are exceedingly variable. *R. japonicum* when grown from wild seed produces plants which mostly have orange colored flowers, usually with a tinge of salmon-rose about them. But certain individuals will appear which have flowers of a distinctly rosy or bright red hue, sometimes almost the color of *R. Kaempferi*, with all conceivable intermediate shades between this extreme and pure orange-yellow occurring in other variant seedlings. Then, too, there is a botanical variety of the species which has beautiful flowers of spectrum yellow and is called var. *aureum*. A fine specimen of this exists in Rochester and makes a grand display in Highland Park about May 30th. Combining, as it does, the yellow pigmentation with the rose or anthocyanin pigments, this species is capable of producing many sorts of intermediate colors, such as the so-called "art" shades one finds in the dahlia, I expect it to become increasingly popular as soon as a knowledge of these features and its qualities of hardiness become better known to the gardening public. It should be noted also that the flowers of *R. japonicum* are among the largest in size for a hardy azalea, often being 3 inches across, and are sometimes borne in

loose trusses of 6 to 12 flowers each, not unlike the flower trusses of a Catawba rhododendron. Indeed, the orange blooms of *R. japonicum* are frequently effective when the plants are grown alongside purple rhododendrons, early varieties of which bloom before the azaleas are gone.

There is every indication that *R. japonicum* enjoys a liberal amount of water during the summer and that it requires irrigation or very heavy mulching with oak leaves in summer to enable it to withstand hot, dry weather. This is a far greater enemy than winter cold. *R. japonicum* does well at Boston, Rochester and Ithaca, and seems to prefer rather open situations. When the leaves are gone, its branching habit is rather interesting, although somewhat coarser than other azaleas. It blooms before the new leaves are fully developed. It grows rather rapidly from seed, and, in alkaline localities, the plants raised locally from seed will probably be better adapted to the peculiarities of the region than plants imported from a distance. This phenomenon is not yet fully proved, but has been observed in England with some of the so-called lime-tolerant rhododendrons and appears to be the case in this country with *R. japonicum*.

R. japonicum is one of the parents of the Mollis Hybrid Azaleas, and it is probable that most of the hardy forms of this race derive those characteristics from this parent. My opinion is that almost all the colors found in the Mollis Hybrids may be obtained by selection from mixed seedlings of pure *R. japonicum* "blood," which should prove much better adapted to American conditions than are the Hybrids. Superior forms, whenever they occur, should be named, grafted and disseminated as clonal varieties, be-



Lilian A. Guernsey

[See page 93]

Rhododendron japonicum

cause they are of real value in this country and are generally preferable to any of the Mollis hybrids. The virtues of *R. japonicum* have become recognized only in recent recent years.

The common name of this species is the Japanese Azalea. In the trade, certain other azaleas are confused with it because of similar or incorrect naming. Certain dealers have long sold a form of *R. mucronatum* under the name of "Azalea japonica alba," a totally different type of plant and in no way related to the real *japonicum*. Similarly, confusion might arise with *R. obtusum* forma *japonicum*, the wild type of the Kurume azalea. This form name, however, should certainly be dropped, since it has no place in the designation of a plant which is apparently the true phylogenetic type.

C. G. BOWERS, Chairman,
Rhododendron Committee.

Binghamton, N. Y.

Helianthus angustifolius (See page 97)

SUNFLOWER! The very name is calculated to bring visions of huge discs nodding in the direction of their great lord and master, the sun; or perchance it may call up childhood reminiscence and wonder as to how they managed the problem of turning about during the night to face the rising sun again next morning without ultimately twisting their great heads off! Even the garden connotation is apt to be of something rather coarse and garish, something to be banished to great distances, or just possibly to be tolerated, not for the flaring gaiety of their flowering but merely as a future feasting place for the titmice and cardinals that love to perch upon their inverted rims and tweak the tasty seeds from beneath the ripening heads.

But it is not of these huge-headed,

broad-leaved, coarse and gaudy individuals that I would write. They have their place in the economy of things, but it is not in the ornamental border of the flower garden. As an ornamental these annual sunflowers are even much harder to place than are hollyhocks, for the latter do find fine artistic placement in connection with out-buildings, picket fences, gate posts, etc., but even these locations seldom offer happy placement of the giant sunflowers.

But, there are SUNFLOWERS and sunflowers! There is a considerable group of perennial sorts which are of varying degrees of merit, but almost always they suffer some demerit that tends to banish them from the more refined gardens. They may not have the great, rough, elephant-ear leafage of the commonest annual sort, but, generally speaking, sunflower foliage is coarse and unbeautiful, and moreover it is apt to be seriously disfigured most seasons by mildew. Some of them there are, with less objectionable coarseness, and some with really attractive bloom, but which are yet too obstreperous in the border, too prone to send out long root runners hither and yon, unwilling to stay put. Given an acre field of rich soil all to themselves, and given sufficient distance, these may produce a never-to-be-forgotten sight, but most of us can not abandon a whole acre of garden to one variety of sunflower, however lovely.

But there is one member of the family against which none of these strictures can be placed. *Helianthus angustifolius*, in the form that is at present under cultivation, was collected near Stuttgart, Oklahoma, in 1915, by Dr. David Griffiths of the United States Department of Agri-



J. Marion Shull

[See page 96]

Helianthus angustifolius

A most acceptable source of yellow in the late perennial border

culture. As growing in my garden at Chevy Chase, Md., it attains a height of some six feet at blooming time, sending up from a well-established clump numerous stems that branch well toward the ground so that the more vigorous canes may carry more than sixty flower heads, well distributed throughout the length of the cane. The size of the flower heads varies from slightly under to somewhat over two inches in diameter, with an average of about fourteen ray florets and a relatively small disc, pranked out with gold lace, a thoroughly charming source of yellow in the late summer or early autumn garden, bridging over, in point of time, the gap that often yawns between the blooming of the later annuals and the coming of the pompon chrysanthemums.

But after all it is not the flower that sets *Helianthus angustifolius* so completely apart from most of the other sunflowers, be they annual or perennial. It is the foliage, that part of any plant that must often be merely tolerated in order that we may enjoy a gorgeous display of blossom later. Here it is no case of merely tolerating for the foliage is highly acceptable at all periods of its development. The stems are rather heavily set with long, almost filiform leaves, leaves that glisten dark green on their upper surface, with whitish underneath. They range up to eight inches in length but are rarely a full quarter of an inch in width, and while there is a certain harshness in them to the touch, the eye is quite deceived by the brilliant light reflections that glitter in the sun. To the eye there is all the delicacy that is found in the leafage of the regal lily—and yet it is a sunflower! It makes a discreet clump,

slowly expanding its girth but always content to stay where the gardener puts it, and thus far it seems reliably hardy, having passed through the winter of 1933-34 without protection, when a temperature of eleven below zero at Chevy Chase killed the crepe myrtles and *Ligustrum lucidum* to the ground and seriously damaged many other things.

Helianthus angustifolius does not seem to be unduly exacting in its requirements, asking only open sunlight and a moderately good garden soil. Given these there are few perennials to excel it on the score of garden appearance every day of the growing year, and it deserves to be very much more widely known and used in American gardens.

MARIAN SHULL.

Chevy Chase, Md.

Geranium sanguineum var. *album*

This is a hardy, bush perennial, flowering in June. It is far prettier with its round white blossoms than the type *sanguineum*, with its blossoms in a magenta of the violet shades, which clashes with all of its neighbors and increases mightily and unexpectedly. In my garden in New York State the var. *album* grows one to two feet high in a border. I should consider it too spreading and too vigorous for the rock garden. The stems are green, round, covered with down and much branched; and the leaves are soft, five parted, further divided and also covered with down and measuring four inches across. The 5 petalled flowers are white with odd irregular purple blotches on them, but the effect is of a white flower 1¼ inches across. The seed pods are characteristic of the family, being fuzzy and having a very long point which projects far out from the calyx.

It is not fragrant but its thick green leaves and neat white flowers make a thoroughly dependable and at the same time highly presentable plant for the herbaceous border. And, it is a comfort to know that certain plants can be absolutely depended upon regardless of drouths, rains, freezes or heat waves. The type comes from Eurasia.

HELEN M. FOX.

Peekskill, N. Y.

A Colorful Trip

Each succeeding Spring finds Holland one vast Flower Show, a Mecca for flower lovers the world over. Sixteen thousand acres devoted to bulbs alone! Sixteen thousand acres of gorgeous bloom! Once every ten years Holland outdoes itself and provides an International Flower Show, the like of which is to be found nowhere else. Such a spectacle will be provided by the International Flower Show at Heemstede, Holland, in the Spring of 1935. Heemstede is a little village near the old flower center of Haarlem. The executives in charge of the event hope to bring together during this period, flower lovers from all parts of the world.

The beautiful old park of Groenendaal, an old estate in Heemstede, will serve as a flower park, covering fifty-five acres, where every effort will be exerted to demonstrate the most effective arrangement of Spring flowers and shrubbery. Mass plantings of spectacular beauty have been made for the main section. Millions of flowers will grace the old Dutch gardens, rockeries, heather gardens, informal plantings and borders, the duplication of which is an almost impossible feat anywhere in the world but in Holland, and even Holland has the courage to do it but once every ten years. Indoor exhibits will afford opportunity

for study and choice of varieties and these will change continuously. The great outdoor displays, however, will be of such magnitude that between color and perfume our prosaic lives will be enriched with new delights and everlasting memories. The space in front of the main hall, the "Tulpenhof"—Court of Tulips—has been planted with 500,000 Tulips. The most vivid imagination would be baffled to picture this sublime color symphony, with its background a spectacular fountain illuminated by colored light effects. Only a trip back to childhood's dreams and the Arabian Nights can visualize for us the pleasure ahead. A large part of the Exposition area will be illuminated at night by indirect flood-lights and there will be opportunity for outdoor dining amid flowery strewn lawns while soft music makes the gratification of the senses complete.

The Horticultural Society of New York is glad to cooperate with the American Committee and with the horticultural societies and garden clubs throughout the United States in bringing the International Flower Show of Heemstede to the attention of all flower lovers and in inviting them to join in a Flower Lovers' Pilgrimage in the Spring of 1935.

The S. S. *Statendam*, splendid flagship of the Holland-America Line, has been selected as the ship on which the Pilgrimage will sail on April 30. In addition to the usual attractions of the voyage, there will be lectures and informal horticultural conferences. And grandest of all experiences, a large group of flower and plant lovers as well as outstanding horticulturists will be banded together in one happy family for a holiday, whose interests and instincts will, naturally, create congenial surroundings.

Please address applications for

reservation to your local garden club, to the Horticultural Society of New York, 598 Madison Avenue, New York City, or to any office of the Holland-America Line or of the American Express Company. Early reservation is recommended to assure securing the type of accommodations desired.

The American Committee,
John T. Scheepers, Chairman,
G. H. Ravelli, Hon. Sec.,
520 Chrysler Bldg.,
New York City.

Lilium callosum Siebold et Zuccarini
(See page 101)

Is one of the hardy and "easy lilies" to grow. It comes readily from seed and seems to like being domesticated in gardens which is not true of so many of the lilies. However, with the *callosum* lily one takes the attitude that beggars must not be choosers, because it is not a startlingly pretty lily. The flowers are a little too small for the height of the stem and the leaves are sparse and very slender. The lilies grown in my garden from seed are under two feet high—the stems are round and smooth, the leaves are smooth, linear and pointed at the tip, growing shorter as they ascend. The lowest are not the longest but a little further up on the stem and these are four feet and three-fourth inches long, and one-fourth inch across. The shortest leaves are just below the flowering stems. The flowers are born on stems, branching out from the main stem and from two to five grow from each bulb. They are of a soft coral color, called "grenadine" in Ridgway, nodding, reflexed and the flowering stem which is two inches long is subtended by two leaf-like bracts which at their tips

have thickened ends, the callous of the name. The flowers are about one and one-eighth inches across. The anthers are pinkish with orange pollen and the pistil is longer than the stamens. The stigma has a three parted bulge at the tip. At the base of the flower, the segments adhere for the first half-inch and then separate and turn back. There are a few tiny little lines a bit darker on the undersurface where the segments turn back. At the base where the segments turn back, there is a faint shading of green. The tips of the three outer segments are thickened and are green on the back. The bulb is creamy white, consisting of a few firmly imbricated, fleshy scales and is one inch long and about the same across. There are many fibrous roots at the base of the bulb which are long and quite tough. There are numerous stem roots, too.

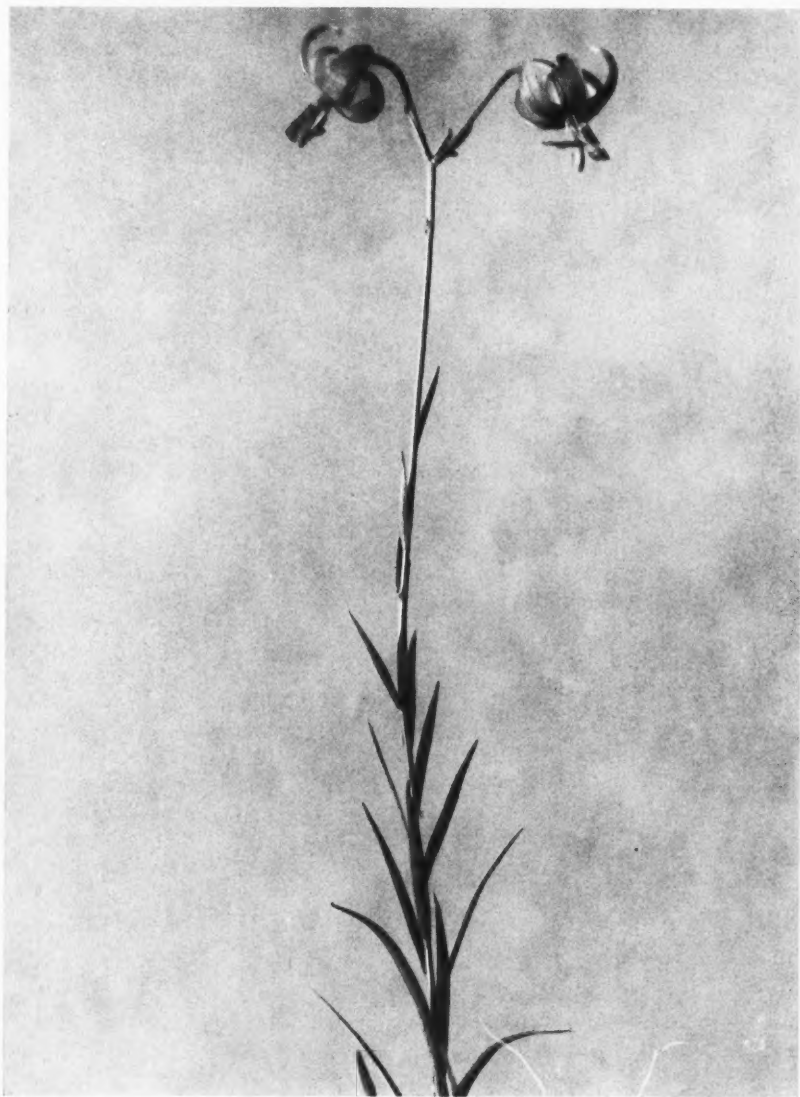
The bulbs flower here from the latter half of July into August.

HELEN M. FOX.

Peekskill, N. Y.

Bamboos

In the spring of 1915, I bought from Dreer a plant of *Arundinaria japonica*, I think under the name of *Bambusa Metake*. I planted it in poor soil in front of the south porch. It grew well enough from the start, but at first with some moderation. Moderation, however, it has long since thrown to the winds. The vigorous and leathery suckers have started on a world tour. It is impossible to say just where the original plant stood, but there is now a small impenetrable jungle yards square. And now it is spreading in a way to give one a faint anxiety. Great canes spring up through the Wistaria on the porch. A new jungle is forming:



Margaret DeM. Brown

[See page 100]

Lilium callosum

on the west side of the house; in fact these colonies are not new. But, what is new, not too pleasing, is the lack of decorum that makes plants appear in flower-beds, in the lawn, along my neighbor's gravel drive. I daresay in a few decades my bamboo will be found all over the town—it will be a war to the death between the bamboo on one side and all the rest of vegetation on the other. Perhaps trees can resist its onslaught, but nothing smaller can do so. Yet, I delight in its fine, bold spirit; and I delight in its beauty. It is grace personified, with a touch of Oriental mystery. The leaves stay green all winter. In late winter or early spring, they turn brown before falling, and at this season the dry whistle of the wind through them is a unique sound. Unique, too, is the motion of the leaves in wind; they seem to flow before it like water; one is amazed to see them still there, tethered in their places.

My records are a bit confused, but I think it was in the spring of 1918 from Tricker, that I bought *Bambusa palmata* and *Phyllostachys nigra*. Only one remains, and I am not perfectly sure which, but I am fairly sure it is *Bamusa palmata*. This has, by no means, been so happy. No jungle here! It was moved once in early years, and saw fit to go into a long sulk. No canes here that reach to the porch roof. It contents itself with a stature of about two feet. But last year, after a bad humor of fourteen years, it decided to be happy and the little clump took on a cozy, well-filled look. And this year I see it has had the temerity to send out suckers fully six inches from the parent plant!

AGNES FALES HUNTINGTON,
Plainfield, N. J.

Pears in the Garden

To those persons who have a deep appreciation of color in field and garden, autumn presents a more beautiful picture than spring or summer ever offered.

Anyone who has travelled through the eastern states, particularly the New England region, is dazed at times by the flaunting scarlet of the maple picked out against a mosaic of dull reds, bronzes, browns, and yellows, of the rolling hills. Spring and summer provide the nearest approach to primary color in their varied bloom, but you who like the softer shades and tones of a time mellowed Persian rug or the patina of old rosewood or mahogany can gratify your senses to the fullest as winter comes.

Even in the midwest the soft mauves and greys and taupes of the grasses, the purple twigs of the plum, the pied mantle of the oaks, the yellow of the ripening elm and cotton wood, supply a back ground for "burning bush" or woodbine. We have learned to supplement the quiet tonal symphony of our autumn by shrubs and plants from foreign lands with such high notes of color as for instance the barberry supplies—soft rose to vivid scarlet.

More time should be spent by every gardener, at least in our less-favored middlewest, in the search for hues and tints in leaf and twig to complete the autumn palette.

Through many autumns I have been impressed by the high note in the garden scheme struck by some of the many pear trees planted in early days throughout our town. In favored seasons the mass of clustered bloom in spring time is surely enchanting, while during the heat of the dog days the deep green sheen



Lilian A. Guernsey

[See page 104]

Syringa Meyeri

of their leaves stands out against the curling foliage of the other trees—a note of coolness most welcome.

It is in autumn, however, that the pear is at its best, from purple to red-bronze, to yellow as the days go by, so beautiful that I wonder why each garden does not have at least one pear to complete the picture.

One tree I have with me, a Duchess de Nemors, which proved and is still proving a perfect delight. Through the town and on almost every farmstead I find the same color notes repeated. What varieties these are I do not know, but any tree which is so generous through the three seasons, in spring time with its fleeting mantle of snow, in summer with its glossy leaf and swelling fruit, and with its last glad farewell of color in autumn is worthy of place in everyman's garden.

Perhaps some one can supply the names of other varieties which are as gorgeous in the fall.

H. H. EVERETT, M. D.
Lincoln, Nebr.

Syringa Meyeri Schn. (See page 103)

In 1908, Frank N. Meyer, while collecting for the Bureau of Plant Industry of the U. S. Department of Agriculture sent from China two sets of lilac cuttings with the note that they were "a small-leaved lilac, bearing many panicles of purple flowers, grafted on a small-leaved privet—much used in forcing; quite rare and expensive; not hardy - - -" As soon as 1912 a plant grown from this importation was identified as a new species by Dr. C. K. Schneider, closely allied to *S. pubescens*.

At the present time one rarely meets this lilac in cultivation al-

though many plants have been sent to nurserymen, and twenty-six years have elapsed since its arrival. It is such delays as this that make one wonder why many good plants that do reach our country are so slow to progress beyond that first stage.

There still remains in the government collection a plant propagated from the original stock, budded in this case on ordinary privet (*Ligustrum ovalifolium*). Whether or not this vigorous root is responsible for the height achieved or whether the location on the north side of a one-story building has resulted.

In our region of more or less uncertain winters, which often cause premature growth in February or March, this plant sometimes loses its crop of flowers, but is never checked in its vigorous growth. Where the blossoms do mature, they cover the ends of the shoots with crowded thyrses so close together that they appear like much larger individual thyrses than they are. In color the flowers are warm reddish lilac with less difference in hue between the unopened buds and the open flowers than in many species. The scent is faint and while not especially pleasant, does not have the sickly sweet privet-like odor of some wild lilacs.

No experiments have been made here to test the behavior of the plant in pots. Probably this would be of little importance here where we can have the perfumed forms of *Syringa vulgaris*. For the amateur who has relatively cold greenhouse, it might be interesting to try, especially when one remembers the charming pots of naked jasmine and various flowering crab apples that appear in the little shops both in China and Japan. Washington, D. C.

